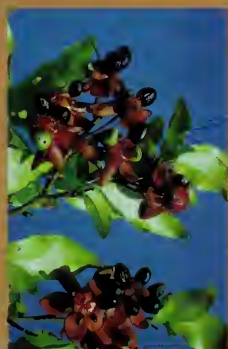
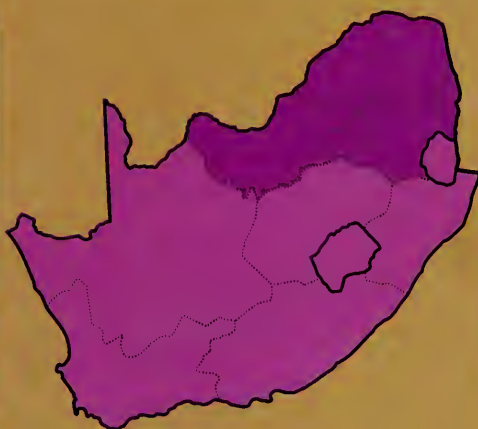
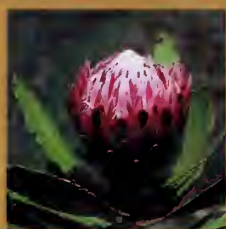
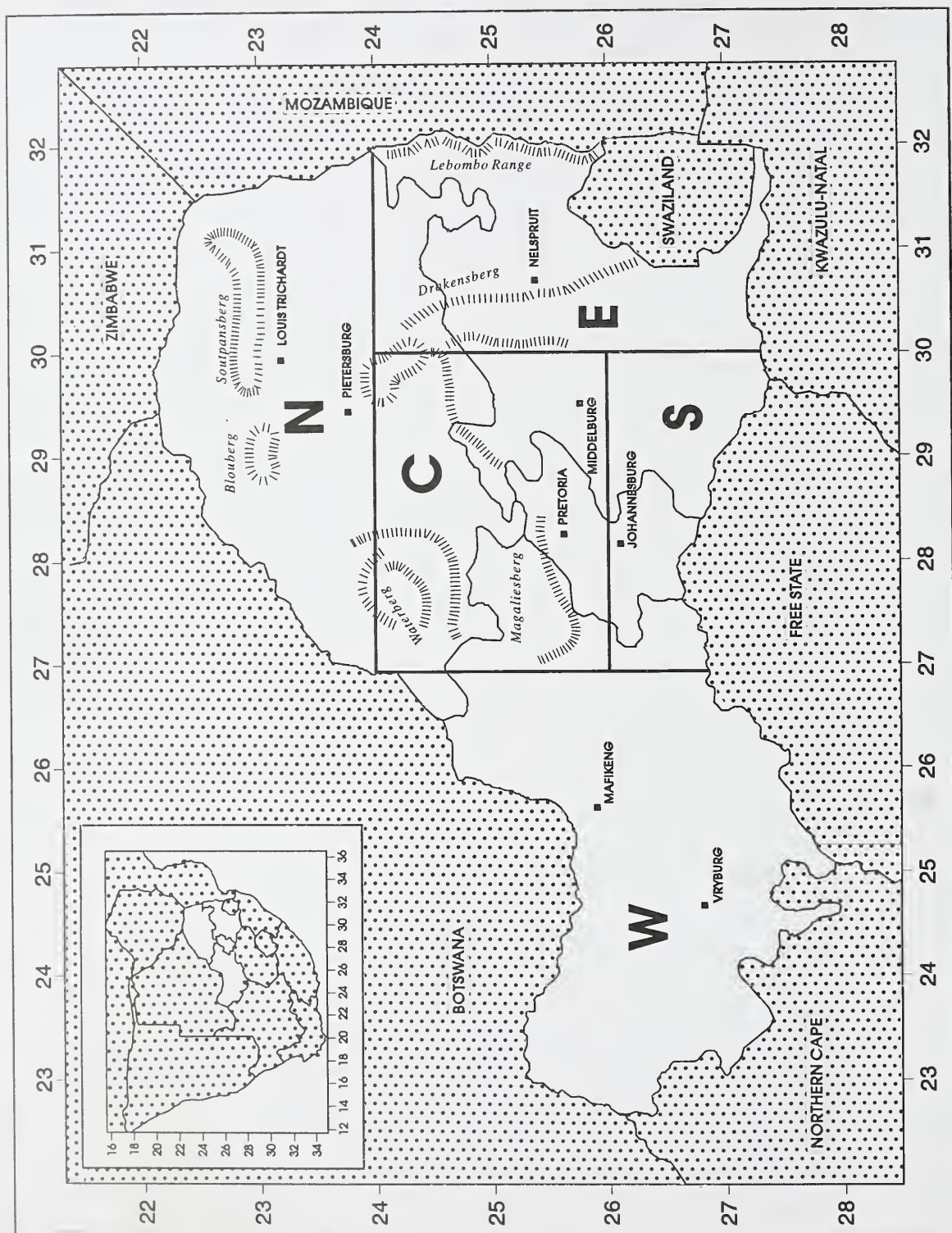


Plants of the northern provinces of South Africa: keys and diagnostic characters

E. Retief and P.P.J. Herman





NASIONALE BOTANIESE
INSTITUUT

Private Bag X 101 PRETORIA 0001

1997-08-12-9

Privaatsak X 101 PRETORIA 0001

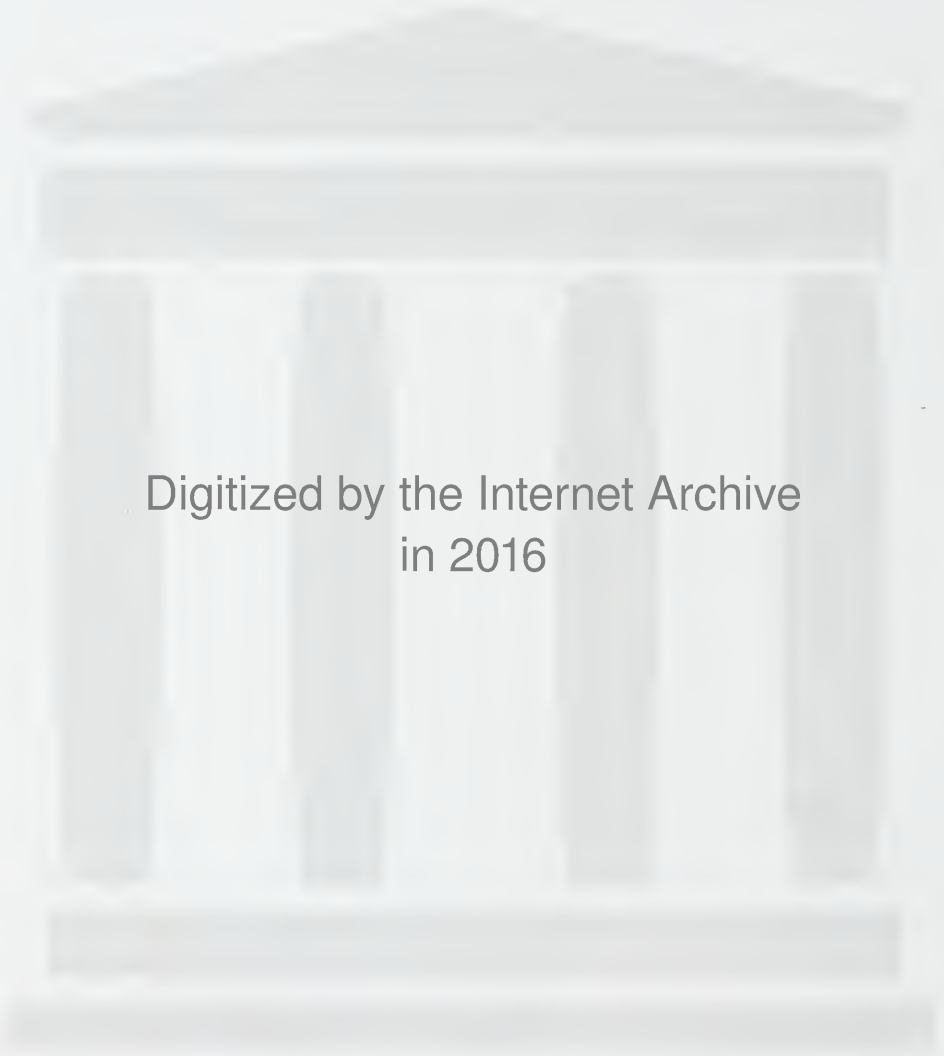
NATIONAL BOTANICAL
INSTITUTE

MARY GUNN LIBRARY



0000003465

South African National
Biodiversity Institute



Digitized by the Internet Archive
in 2016

<https://archive.org/details/plantsofnorthern06reti>

*S*TRELITZIA 6

Plants of the northern provinces of South Africa: keys and diagnostic characters

by

E. Retief and P.P.J. Herman

Scientific editor: O.A. Leistner

Technical editor: E. du Plessis



NATIONAL
*B*OTANICAL
INSTITUTE

National Botanical Institute
Pretoria

1997

STRELITZIA

This series has replaced *Memoirs of the Botanical Survey of South Africa* and *Annals of Kirstenbosch Botanic Gardens* which the NBI inherited from its predecessor organizations.

The genus *Strelitzia* occurs naturally in eastern southern Africa. It comprises three arborescent species, known as wild bananas, and two acaulescent species, known as crane flowers or bird-of-paradise flowers. The logo of the National Botanical Institute is based on the striking inflorescence of *Strelitzia reginae*, a native of the Eastern Cape and KwaZulu-Natal that has become a garden favourite worldwide. It symbolizes the commitment of the National Botanical Institute to promote the sustainable use, conservation, appreciation and enjoyment of the exceptionally rich plant life of South Africa, for the benefit of all its people.

Cover design by the authors, assisted by D. Davidson and P. Hartzer. Clockwise from top left: *Gerbera jamesonii*; *Adenium multiflorum*; *Hibiscus engleri*; *Bauhinia galpinii*; *Protea rubropilosa*; *Euphorbia cooperi*; northeastern mountain sourveld near Graskop; *Ficus ingens*; *Terminalia sericea*; *Acacia nilotica*; *Pterocarpus angolensis*; *Ochna serrulata*; bankenveld; landscape with *Euphorbia ingens* (all from the slide collection of the National Botanical Institute, Pretoria).

ISBN 1-874907-30-7

Contents

FOREWORD v

ABSTRACT vii

INTRODUCTION 1

 Background and aim 1

 Area covered 1

 Climate, topography and soils 1

 Vegetation 2

 Flora 2

 Description of the five subregions 2

 Structure of entries in the four main chapters 3

 List of literature abbreviations used in this publication 4

 Key to the major groups 5

FERNS & FERN ALLIES 6

GYMNOSPERMS 32

MONOCOTYLEDONS 35

DICOTYLEDONS 201

FURTHER READING 652

CRONQUIST'S SYSTEM 654

GLOSSARY 656

ACKNOWLEDGEMENTS 672

INDEX TO FAMILIES AND GENERA 673

This publication is dedicated to all the plant collectors and researchers
who gathered the material and information which enabled us to compile this work.



FOREWORD

The wealth of South Africa's flora is legendary, so much so that most of the country's citizens take it for granted. Few realise that dozens of species and hybrids, now common in international horticulture, have their origins in specimens collected from the South African veld a century or more ago. The spectacular cultivars of *Gerbera*, *Pelargonium*, *Streptocarpus*, *Gladiolus*, *Clivia*, *Ixia*, *Freesia* and many others that now decorate the homes and gardens of Europe, America, Australia and Asia are, in their genetic origin, as South African as bontebok, springbok, black wildebeest or white rhinoceros.

In the past, access to such genetic resources was free and in most cases, uncontrolled. The global significance of biological resources to humanity's economic and social development has only recently been widely recognised, and it was not until June 1992 that an international agreement—the Convention on Biological Diversity—was established for 'the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources'.

South Africa ratified the Convention on 2 November 1995, an act which places significant responsibilities on the government to meet the terms of the Convention. While these terms place demands on South Africa, they also establish national sovereignty over our indigenous flora, and most particularly those species which are endemic—those that do not occur naturally in any other country.

With the ratification of the Convention on Biological Diversity, a completely new role and responsibility emerges for our botanists, most particularly for our taxonomists. In terms of Article 7 of the Convention, each contracting party shall, *inter alia*, '... identify components of biological diversity important for its conservation and sustainable use ...'. Furthermore, in terms of Article 17, each contracting party shall, *inter alia*, '... facilitate the exchange of information relevant to the conservation and sustainable use of biological diversity ...'.

Plants of the northern provinces is a major contribution to our international obligations arising from the Convention. This volume dramatically advances our knowledge of the flora of four of South Africa's nine provinces, and provides an inventory of nearly 25% of the plants of the *Flora of southern Africa* region—which includes five sovereign states (Botswana, Lesotho, Namibia, South Africa and Swaziland). The scientific value of the list of species and subspecies is underpinned by reference to actual herbarium specimens held in the National Herbarium, Pretoria, and in some cases, other herbaria in the region. The names applied, and in many cases their most common synonyms, serve as the most up-to-date reference for a flora of over 5 700 species.

This volume, together with similar volumes in revision or in preparation for other parts of South Africa, will provide the building blocks of a comprehensive electronic flora of southern Africa, integrated within the vast database known as PRECIS, developed at the National Herbarium, Pretoria, over the past twenty years. PRECIS holds detailed voucher specimen information from over 850 000 herbarium sheets, and includes over 23 000 taxa indigenous to or naturalised in the *Flora of southern Africa* region. By preparing detailed synopses such as *Plants of northern provinces*, the taxonomists of the National Botanical Institute ensure the maintenance of South Africa's pre-eminent position in African botany, and contribute significantly to attaining the scientific objectives of the Convention on Biological Diversity.

Brian J Huntley (Prof.)
Chief Executive
National Botanical Institute

1 April 1997

ABSTRACT

RETIEF, E. & HERMAN, P.P.J. 1997. Plants of the northern provinces of South Africa: keys and diagnostic characters. *Strelitzia* 6: 1–681.

Keywords: descriptions, distribution, habitat, keys, northern provinces, South Africa.

The four northern provinces of the Republic of South Africa are the Northern Province, North-West, Gauteng and Mpumalanga. Descriptions of the ferns and fern allies, gymnosperms, monocotyledons and dicotyledons occurring in the area comprise the bulk of this work and include the following: life form, height, distinguishing characters, flower colour and flowering time (where applicable), habitat, a voucher specimen and distribution in the four provinces according to five subregions: north (N), west (W), central (C), south (S) and east (E). Keys to the major groups, families and genera are provided. Families, genera and species are arranged alphabetically. An illustrated glossary and a listing of families according to the Cronquist System are also provided. The work is aimed at professional botanists, nature conservationists, students, amateur botanists and informed laymen.

INTRODUCTION

BACKGROUND AND AIM

The first attempt at a formal treatment of the flora of the former Transvaal Province were the two volumes of *A manual of the flowering plants and ferns of the Transvaal with Swaziland, South Africa* by Joseph Burtt Davy, published in 1926 and 1932. Unfortunately Burtt Davy died before this work was completed and only 1877 taxa were dealt with. In recent years numerous publications have appeared dealing with plants growing in the former Transvaal, such as *Wild flowers of the Transvaal* by Cythna Letty (1962), *Trees of the Kruger National Park* by Piet van Wyk (1972 & 1974), *Transvaal wild flowers* by Anita Fabian & Gerrit Germishuizen (1982), *The flora of the Witwatersrand* edited by T. Lowrey & S. Wright (1987) and *Field guide to the wild flowers of the Witwatersrand and Pretoria region* by Braam van Wyk & Sasa Malan (1988). These mostly richly illustrated works are very useful for the identification of many local plants but none of them attempts to cover all known flowering plants and ferns of the region.

This work, started at the instigation of Mr Trevor Arnold, former curator of the National Herbarium, Pretoria, was originally meant to be entitled *The flora of Transvaal* and to cover only that region. In view of the new delimitation of provinces in South Africa since 1994, the North-West Province, comprising the district of Vryburg and the western parts of the former Bophuthatswana, was included in the work, and the title was changed.

The information contained in this publication was largely compiled from literature and from herbarium specimens housed in the National Herbarium, Pretoria. The material of certain groups was out on loan to other institutions and information on topics such as flowering time and habitat could therefore not be obtained from specimens involved.

There are still many taxonomic problems and uncertainties about the distribution of taxa. However, it is hoped that *Plants of the northern provinces* will facilitate the identification of plants in the region. The work is seen as a forerunner of other publications to come, for instance other regional floras and the PRECIS (National Herbarium [PRE] Computerized Information System) flora. It is also envisaged that this publication will encourage people to collect plants in undercollected areas, such as parts of the North-West Province, so that a more complete picture of the flora can be obtained. A plant collecting programme is being run by the NBI in which staff as well as outside persons can participate.

Plants of the northern provinces is aimed at professional botanists, nature conservationists, students, amateur botanists and informed laymen. It seeks to assist in the identification of plants and to provide essential information as well as pleasure and to stimulate and promote an interest in the rich flora of the region.

AREA COVERED

The publication covers the four northern provinces of the Republic: North-West, Gauteng, Northern Province and Mpumalanga, an area of some 325 000 km².

The region extends from about 22° 40' to 32° 00' E and from 22° 10' to 28° 00' S at an altitude ranging from about 300 m in the lowveld in the east, to the wide plains of the Kalahari basin around 1 000 m in the west, and the extensive highveld between 1 500 and 2 000 m, to the highest mountain peaks in the eastern escarpment at about 2 330 m.

Long before the region was divided into four provinces, Magill (1981) in *Flora of southern Africa*, Bryophyta, Part 1 Mosses, Fascicle 1: vii subdivided the former Transvaal fairly arbitrarily along degree lines into five subregions. These subregions have been taken up in the present work, except that the western entity has been extended to include the North-West Province, and the 'T' has been omitted from the symbols assigned by Magill (1981) to his areas. The five subregions are here referred to as W (west), S (south), C (central), N (north) and E (east)—see map on inside front or inside back cover. The distribution of all species is given in terms of these five subregions which will be described in some detail below.

CLIMATE, TOPOGRAPHY AND SOILS

The four northern provinces lie in the summer rainfall area of South Africa. The annual precipitation ranges from around 220 mm in the far west and in the extreme north, with a general tendency to increase from west to east up to around 2 000 mm in the eastern escarpment zone. The average annual rainfall over much of the region lies between 400 and 800 mm.

Thunderstorms are a common occurrence during the rainy season which extends from about September/October to around March; the frequency of hailstorms is high. The summer season is hot and often dry, especially in the northern and western parts. The winters are dry with cool days and cold nights, and with frost generally occurring on between 30 and 180 days over much of the region.

The geology is highly complex and has a long history, with the oldest rocks dating to approximately 3 600 million years (Ma) (South African Committee for Stratigraphy (SACS), 1980. *Stratigraphy of South Africa*. Part 1 (Comp. L.E. Kent). *Lithostratigraphy of the Republic of South Africa, South West Africa/Namibia, and the Republics of Bophuthatswana, Transkei and Venda*: Handb. geol. Surv. S. Afr., 8, and simplified by H.M. Anderson, pers. comm.). The soils, which vary considerably, will be briefly mentioned in each of the five subregions discussed below (E.D. Adler, 1985, *Soil conservation in South Africa*, Bulletin 406 of the Department of Agriculture and Water Supply).

VEGETATION

Two major biomes are distinguished in the four northern provinces: grassland and savanna (Rutherford & Westfall 1994, *Biomes of southern Africa: an objective categorization*). The grassland is largely restricted to the highveld in the central and southern parts of the region as far as the eastern escarpment. The areas in the west, north and east are mostly classified as savanna (Rutherford & Westfall 1994). Acocks (1988, *Veld types of South Africa*, 3rd edn, Map 2) recognises the same basic units with similar boundaries but he subdivides what he refers to as grassveld into sweet, mixed and sour grassveld and he recognises a few spots of forest/scrub forest on the eastern escarpment. The area labelled savanna by Rutherford & Westfall (1994), he calls bushveld. The so-called sweet grassland (a term preferred to 'grassveld', *vide* Rutherford & Westfall 1994) is largely restricted to regions receiving less than about 600 mm rain per year, whereas sour grassland is found in the moister regions, with mixed grassland recorded from intermediate regions. The term 'savanna' refers to vegetation with a herbaceous, usually graminoid layer with an upper layer of woody plants which can vary from widely spaced to 75% canopy cover (Rutherford & Westfall 1994). Seeing that most southern African trees are of tropical origin and are sensitive to frost, savanna is largely restricted to regions with an altitude below 1 400 m. Fires are a frequent occurrence in both savanna and grassland and most plants can withstand the effects of fire.

FLORA

The flora of the northern provinces is represented by 204 families, 1 397 genera and 5 768 species and subspecific taxa. The total flora of southern Africa comprises 259 families, 2 312 genera and 23 686 species and subspecific taxa (Arnold & De Wet 1993, *Plants of southern Africa: names and distribution*). This means that 79% of the families, 60% of the genera and 24% of the southern African taxa occur in the northern provinces. The three largest families in this area are the Fabaceae, Poaceae and Asteraceae. About 10–12% of the taxa occurring in the northern provinces are endemic to this region, with the highest occurrence of endemics in the eastern subregion and the lowest in the western subregion. The five genera with the most endemic species are *Aloe*, *Euphorbia*, *The-sium*, *Indigofera* and *Brachystelma*. The relationships among the families are shown in terms of the classification system of Cronquist on page 654.

DESCRIPTION OF THE FIVE SUBREGIONS

West (W)

Most of this subregion consists of extensive plains rising gently from the Kalahari basin in the west to low hills and ridges and the foothills of the Magaliesberg in the east. The plains in the west are covered mainly by red Kalahari sand grading into heavier loam and clay in the eastern parts. The Ventersdorp Supergroup, consisting mainly of volcanic rocks from the Randian Erathem (2 500–900 Ma), is found in this subregion.

The average annual rainfall ranges from about 220 mm in the west to 600 mm in the east.

Acocks (1988, Map 2) classifies the vegetation of the southeastern parts as grassveld, ranging from sweet to mixed to sour grassveld in accord with the annual precipitation which increases from west to east. In the western half of this grassveld area patches of karoo vegetation are found (Acocks 1988). The rest of the subregion is dominated by bushveld (Acocks 1988) or savanna (Rutherford & Westfall 1994).

South (S)

This subregion is generally known as the highveld. The southern boundary is formed by the Vaal River but there are no clear landmarks demarcating the western, northern and eastern borders. The Witwatersrand Supergroup from the Randian Erathem (3 100–2 650 Ma) is of great importance, yielding gold. The soils are acid and neutral sands, loams and clays.

The average annual rainfall ranges between 580 and 860 mm.

The vegetation of this subregion comprises sour, sweet and mixed grassveld (Acocks 1988, Map 2) or grassland (Rutherford & Westfall 1994).

Central (C)

The central subregion encompasses the Waterberg in the northwest and the Magaliesberg in the south with the bushveld basin, comprising the Springbok Flats between these two mountain ranges, extending to the Olifants River valley and the escarpment in the east. Sedimentary and subordinate volcanic rocks of the Transvaal Supergroup from the Vaalian Erathem (2 650–2 050 Ma) form the Magaliesberg while sedimentary and volcanic rocks of the Waterberg Group from the Mokolian Erathem (2 500–900 Ma) form the Waterberg. The bushveld complex, also from the Vaalian Erathem, is a suite of igneous rocks of great economic importance (platinum, chrome, etc.) as is the Karoo Supergroup from the Palaeozoic and Mesozoic Erathems (570–65 Ma) of the Springbok Flats which yields coal. The soils of the central subregion consist mainly of acid or neutral sands, loams and clays, with an extensive area in which shallow soil on lime is found in bottomland sites.

The average annual rainfall varies from about 530 to 830 mm.

Acocks (1988, Map 2) classifies the vegetation of the central subregion as mainly mixed bushveld, with sour grassveld forming the southern and eastern border of this area. According to Rutherford & Westfall (1994), the central subregion is largely covered by savanna, whereas grassland occurs along the southern and eastern parts.

INTRODUCTION

North (N)

The northern subregion comprises the northern part of the Waterberg in the southwest, the Soutpansberg and Pietersburg plateau, and the Limpopo valley and adjoining low-lying areas, with the Limpopo River forming the natural northern boundary. Sedimentary and volcanic rocks (lavas) of the Mokolian, Palaeozoic and Mesozoic Erathems form the Soutpansberg Group and the Lebombo Mountains. The soils of this subregion are mainly neutral sands, loams and clays, with rock and lithosols mainly in the Soutpansberg, and weakly developed soils, often underlain by lime, in bottomland sites in the east.

The average annual rainfall varies from about 330 mm to over 2 000 mm in parts of the Soutpansberg.

The vegetation of this subregion is largely made up of mixed bushveld, patches of sour grassveld and a spot of forest/scrub forest (Acocks 1988, Map 2), or of savanna (Rutherford & Westfall 1994).

East (E)

This subregion is demarcated by the Transvaal Drakensberg (escarpment) in the west descending into the lowveld towards the Lebombo Range which forms the eastern border; the Vaal River forms the southern boundary. Granite intrusions with subordinate gneisses and relicts of greenstone belts (metamorphosed sedimentary rocks and lavas) from the Swazian Erathem (3 600–3 100 Ma), such as those occurring in the Barberton Mountains, sedimentary and subordinate volcanic rocks of the Transvaal Supergroup from the Vaalian Erathem and volcanic rocks (lavas) from Palaeozoic and Mesozoic Erathems forming the Lebombo Mountains make up the geology of this subregion. Much of the area is covered by shallow, weakly developed, often sandy soils, with clays occurring mainly in the southwest and in a narrow belt along the eastern boundary.

The average annual rainfall varies from about 430 mm in the northeast to over 2 000 mm on the escarpment.

The vegetation of this subregion consists of mixed bushveld, sour grassveld, a spot of forest/scrub forest on the escarpment and a spot of mixed grassveld in the extreme south (Acocks 1988, Map 2), or of both savanna and grassland (Rutherford & Westfall 1994).

STRUCTURE OF ENTRIES IN THE FOUR MAIN CHAPTERS

Families and all ranks below them are arranged alphabetically, except subspecific taxa, of which the typical taxon is given first. A listing of families according to the system of Cronquist as given by Brummitt (1992) can be found in the chapter on classification.

The following identification keys are provided: to the families of the ferns and fern allies, gymnosperms, monocotyledons and dicotyledons; to the genera; to species or groups of species in certain large genera.

Short family descriptions were compiled from various sources, using in particular the following: Dyer (1975 & 1976, *The genera of southern African flowering plants*, Vols 1 and 2); Jacobsen (1983, *The ferns and fern allies of southern Africa*); and Van Wyk & Malan (1988, *Field guide to the wild flowers of the Witwatersrand and Pretoria region*).

The taxon descriptions comprise the following:

- genus name with author citation;
- the number of species in each genus in the *Flora of southern Africa* region (comprising Namibia, Botswana, Northern Province, North-West, Gauteng, Mpumalanga, Free State, Swaziland, KwaZulu-Natal, Lesotho, Northern Cape, Western Cape and Eastern Cape);
- genus number according to Arnold & De Wet (1993, *Plants of southern Africa: names and distribution*), based on the De Dalla Torre & Harms numbering system;
- literature consulted for names and descriptions of plants in the area;
- the correct name and author citation. 'Sens. lat.' (*sensu lato* = in the wide sense) means that no infraspecific taxa are upheld in this publication;
- an * after a name indicates that this taxon is naturalized in the area;
- synonyms: only the most important two, sometimes more, are given;
- a brief description comprising life form, height, a few distinguishing characters, flower colour, flowering time and habitat. The distinguishing characters were randomly described and no attempt was made to follow a specific order. Flower colour and flowering time are printed in italics as a convenient aid to identification. It must be borne in mind that the information for the flowering times was in most cases obtained from the specimen labels. The habitat information was also mostly taken from the labels and no attempt was made to classify this information;
- in the case of naturalized taxa, the country of origin;
- a voucher specimen, unless indicated otherwise, housed in PRE. When no specimen in PRE is cited, the names, descriptions and distribution were obtained from the literature;
- distribution in the northern provinces according to the five subregions described above: west, south, central, north and east. In the text these subregions are indicated by W, S, C, N and E. Shaded blocks indicate the presence of a taxon in a subregion. A list of quarter degree references according to Leistner & Morris (1976, *Southern African place names in Annals of the Cape Provincial Museums* 12) is given in Table 1.

Table 1.—List of quarter-degree grids for the northern provinces of South Africa.

West (W)	2425DD; 2426BB; 2426BC; 2426BD; 2426CB; 2426CC; 2426CD; 2426D; 2522BD; 2522DB; 2522DD; 2523AC; 2523AD; 2523BC; 2523C; 2523D; 2524CA; 2524CC; 2524CD; 2524DC; 2524DD; 2525BB; 2525BC; 2525BD; 2525CC; 2525CD; 2525D; 2526; 2622B; 2623; 2624; 2625; 2626; 2723AA; 2723AB; 2723AD; 2723BA; 2723BB; 2723BC; 2724A; 2724B; 2724CA; 2724CB; 2724CD; 2724D (parts); 2725A; 2725B; 2725CA; 2725CB; 2725CC; 2725DA; 2725DB; 2726A; 2726BA; 2726CA; 2824AB; 2824BA; 2824BB; 2825AA
South (S)	2627A; 2627B; 2627C; 2627DA; 2627DB; 2628A; 2628B; 2628CA; 2628CB; 2628CD; 2628D; 2629; 2729AA; 2729AB; 2729AD; 2729B
Central (C)	2427; 2428; 2429; 2527; 2528; 2529
North (N)	2227DD; 2228BD; 2228C; 2228D; 2229; 2230AC; 2230AD; 2230BC; 2230BD; 2230C; 2230D; 2231AC; 2231C; 2326DB; 2326DD; 2327AD; 2327B; 2327C; 2327D; 2328; 2329; 2330; 2331A; 2331BA; 2331BC; 2331C
East (E)	2430; 2431; 2432AC; 2432CA; 2432CC; 2530; 2531A; 2531B; 2531CA; 2531CB; 2531CC; 2531D; 2532AA; 2532AC; 2532CA; 2630A; 2630BA; 2630BB; 2630BC; 2630C; 2630DA; 2630DC; 2630DD; 2631AA; 2730AA; 2730AB; 2730AC; 2730BA; 2730BB; 2730BD; 2731AA; 2731AC; 2731AD; 2731BC; 2731BD

LIST OF LITERATURE ABBREVIATIONS USED IN THIS PUBLICATION

This list comprises the abbreviations and full titles of literature references quoted in the text.

A

Acta bot. neerl. = Acta botanica neerlandica
 Adansonia = Adansonia
 Am. J. Bot. = American Journal of Botany
 Ann. Bolus Herb. = Annals of the Bolus Herbarium of the South African College
 Ann. Kirstenb. = Annals of the Kirstenbosch Botanic Gardens
 Ann. Mo. bot. Gdn. = Annals of the Missouri Botanical Garden
 Ann. S. Afr. Mus. = Annals of the South African Museum
 Ann. Transv. Mus. = Annals of the Transvaal Museum
 Annali Bot. = Annali di botanica
 Annln naturh. Mus. Wien = Annalen des Naturhistorischen Museums in Wien

B

Bolm Soc. broteriana = Boletim da Sociedade Broteriana
 Bot. J. Linn. Soc. = Botanical Journal of the Linnean Society
 Bot. Jb. = Botanische Jahrbücher
 Bot. Notiser = Botaniska Notiser
 Bot. Tidsskr. = Botanisk Tidsskrift
 Bull. Herb. Boissier = Bulletin de l'Herbier Boissier
 Bull. Jard. bot. Etat Brux. = Bulletin du Jardin botanique de L'Etat, à Bruxelles
 Bull. Jard. bot. nat. Belg. = Bulletin du Jardin botanique national de Belgique
 Bull. Nat. Hist. Museum (Bot.) = Bulletin of the Natural History Museum (Botany Series)
 Bull. Soc. bot. Fr. = Bulletin de la Société botanique de France

C

Cactus Succ. J., U.S. = Cactus and Succulent Journal (U.S.)
 Can. J. Bot. = Canadian Journal of Botany
 Compos. Newsl. = Compositae Newsletter
 Contr. Bolus Herb. = Contributions from the Bolus Herbarium
 Contr. Gray Herb. Harv. = Contributions from the Gray Herbarium of the Harvard University

D

Dansk. bot. Ark. = Dansk botanisk Arkiv
 DC., Prodr. = Candolle, A.P. De, Prodrum systematis naturalis regni vegetabilis
 Durban Mus. Novit. = Durban Museum Novitates
 Dyer, Gen. = Dyer, The genera of southern African flowering plants

E

Edinb. J. Bot. = Edinburgh Journal of Botany
 Excelsa Tax. Ser. = Excelsa Taxonomic Series

F

F.C. = Flora capensis
 F.S.A. = Flora of southern Africa
 F.S.W.A. = Prodrum einer Flora von Südwestafrika
 F.T.A. = Flora of tropical Africa
 F.T.E.A. = Flora of tropical East Africa
 F.W.T.A. = Flora of West tropical Africa
 F.Z. = Flora zambesiaca
 Feddes Reprium = Feddes Repertorium
 Feddes Reprium Beih. = Feddes Repertorium Beiheft
 Fl. Austr. = Flora of Australia
 Fl. d'Afr. Centr., Spermatophytes = Flore d'Afrique Centrale, Spermatophytes
 Fl. Europ. = Flora Europaea
 Fl. Gabon = Flore du Gabon
 Fl. Japan = Flora of Japan
 Fl. Mo. = Flora of Missouri
 Fl. Mozamb. = Flora de Moçambique
 Fl. Prov. Buenos Aires = Flora de la Provincia de Buenos Aires
 Fl. Transv. = A manual of the flowering plants and ferns of the Transvaal with Swaziland
 Flower. Pl. Afr. = Flowering Plants of Africa

G

Gdnrs' Chron. = Gardeners' Chronicle
 Gdns' Bull., Singapore = Gardens' Bulletin Singapore

H

Hooker's Icon. Pl. = Hooker's Icones Plantarum

J

J. Adelaide Bot. Gard. = Journal of the Adelaide Botanic Gardens
 J. Arnold Arbor. = Journal of the Arnold Arboretum
 J. Bot., Lond. = Journal of Botany, London
 J. Fac. Sci. Tokyo Univ. = Journal of the Faculty of Science, Tokyo University
 J. Linn. Soc., Bot. = The Journal of the Linnean Society of London (Botany)
 JI S. Afr. Bot. = Journal of South African Botany.

K

Kew Bull. = Kew Bulletin

M

Manual Vasc. Pl. Texas = Manual of the Vascular Plants of Texas
 Med. bot. Lab. Utrecht = Mededelingen van het botanisch laboratorium en herbarium van de Rijksuniversiteit te Utrecht

- Meded. LandbHoogeschool Wageningen = Mededelingen van de Landbouwhoogeschool te Wageningen
 Mem. bot. Surv. S. Afr. = Memoirs of the Botanical Survey of South Africa
 Mems Soc. broteriana = Memorias da Sociedade Broteriana
 Mitt. bot. StSamml., Münch. = Mitteilungen aus der Botanischen Staatssammlung, München
 Mitt. Inst. Allg. Bot., Hamb. = Mitteilungen aus dem Institut für Allgemeine Botanik
 Monographs Syst. Bot. = Monographs in Systematic Botany from the Missouri Botanical Garden
- N**
 N. Am. Fl. = North American Flora
 Natürl. PflFam. = Die natürlichen Pflanzenfamilien
 Natürl. PflFam. Nachtr. & Register = Die natürlichen Pflanzenfamilien, Nachträge & Register
 Nord. J. Bot. = Nordic Journal of Botany
 Norw. J. Bot. = Norwegian Journal of Botany
 Notes R. bot. Gdn Edinb. = Notes from the Royal Botanic Garden, Edinburgh
 Notizbl. bot. Gart. Mus. Berl. = Notizblatt des Botanischen Gartens und Museums zu Berlin
- O**
 Onderstepoort Jl. Vet. Res. = The Onderstepoort Journal of Veterinary Research
 Opera Bot. = Opera Botanica
- P**
 Pflanzenreich = Das Pflanzenreich
 Pl. Syst. Evol. = Plant Systematics and Evolution
- R**
 Regnum veg. = Regnum vegetabile
- Rep. botl. Soc. Exch. Club Br. Isl. = Report of the Botanical Society and Exchange Club of the British Isles
 Reprium nov. Spec. Regni veg. = Repertorium novarum specierum regni vegetabilis
 Rev. Sudamer. Bot. = Revista sudamericana de botanica
- S**
 S. Afr. J. Bot. = South African Journal of Botany
 S.A.O.J. = South African Orchid Journal
 Stuttg. Beitr. Naturk. Ser. A = Stuttgarter Beiträge zur Naturkunde aus dem Staatlichen Museum für Naturkunde in Stuttgart
 Succ. pl. and their fam. = Succulent plants and their families
 Svensk bot. Tidskr. = Svensk botanisk tidskrift
 Symb. bot. upsal. = Symbolae botanicae upsaliensis
 Syst. Bot. = Systematic Botany
 Syst. Veg. = Systema vegetabilium
- T**
 Trans. Linn. Soc. Lond. = Transactions of the Linnean Society of London
 Trans. R. Soc. S. Afr. = Transactions of the Royal Society of South Africa
 Trans. S. Afr. phil. Soc. = Transactions of the South African Philosophical Society
- V**
 Verh. Kon. Ned. Akad. Wetensch., Afd. Natuurk. = Verhandelungen der Koninklijke Nederlandsche Akademie van Wetenschappen; Afdeling Natuurkunde
 Vjschr. naturf. Ges. Zürich = Vierteljahresschrift der Naturforschenden Gesellschaft in Zürich
- Z**
 Zeitschr. für Sukkulantenk. = Zeitschrift für Sukkulantenkunde

KEY TO THE MAJOR GROUPS

Key to the ferns, fern allies and major groups of the seed plants, modified and expanded from Dyer, Gen. 1: 6 (1975) by H.F. Glen (1993, pers. comm.).

- 1a Plants without flowers; ovules naked (solitary or in unisexual cones), or reproduction by spores 2
 1b Plants with flowers and fruit; flowers unisexual or bisexual 3
- 2a Reproduction by spores (not containing an embryo); fertile leaves similar or different in form to sterile ones ... **Ferns & fern allies**
 2b Reproduction by seeds (containing an embryo) **Gymnosperms**
- 3a Leaves usually parallel-veined (except Dioscoreaceae); floral parts usually in threes (except in e.g. Poaceae, Orchidaceae); vascular bundles scattered in stem; embryo with 1 cotyledon **Monocotyledons**
 3b Leaves usually net-veined; floral parts usually in fours or fives (except in e.g. Euphorbiaceae); vascular bundles in a ring in the stem; embryo with 2 cotyledons **Dicotyledons**

F E R N S & F E R N A L L I E S

Key to families of ferns and fern allies (pteridophytes) by Retief, after Schelpe & Anthony in F.S.A.
Pteridophyta: 1–292 (1986).

1a	Leaves all narrow and simple, entire (usually small) with unbranched veins; sporophylls either with a sporangium at base or subtending a sporangium or with sporangia borne within a cone-like structure	2
1b	Leaves usually broad, simple or dissected, lamina with a branched vascular supply	6
2a	Sporangia borne on peltate sporangiophores, arranged in a cone-like structure; leaves reduced to a short, toothed sheath at each node	EQUISETACEAE
2b	Sporangia borne in axils of sporophylls or on their bases	3
3a	Plants homosporous; leaves without ligules	4
3b	Plants heterosporous; leaves with ligules	5
4a	Sporangia 3-lobed; stems leafless except for minute, much reduced sporophylls	PSILOTAECACE
4b	Sporangia not lobed; stems with numerous leaves	LYCOPODIACEAE
5a	Plants aquatic, wholly or partly submerged during wet season, sedge-like; sporangia borne on leaf bases; stem on a short, lobed rootstock	ISOETACEAE
5b	Plants not aquatic, often mosslike with elongated, erect or creeping stems; sporangia borne in axils of differentiated sporophylls	SELAGINELLACEAE
6a	Sporangia thick-walled, without an annulus; homosporous	7
6b	Sporangia thin-walled, with an annulus; homosporous or heterosporous	8
7a	Sporangia borne in 2 rows on a distinct, slender, fertile segment; sterile lamina entire (or lobed)	OPHIOGLOSSACEAE
7b	Sporangia fused in small groups on undersurface on undifferentiated lamina segments	MARATTIACEAE
8a	Plants aquatic, floating or rooted	9
8b	Plants terrestrial, epiphytic or lithophytic	12
9a	Plants aquatic, floating	10
9b	Plants aquatic, rooted	11
10a	Leaves in whorls of 3, one submerged, dissected and rootlike, other 2 floating	SALVINIACEAE
10b	Leaves not in whorls, 2-lobed, true roots present	AZOLLACEAE
11a	Each frond consisting of 4 leaflets borne at apex of an obvious petiole; sporangia enclosed in hard beanlike sporocarps	MARSILEACEAE
11b	Fronds pinnately divided; sporangia borne on pinnately divided fronds, fertile and sterile fronds dimorphic to a greater or lesser extent; sori covering undersurface of fertile pinnae, exindusiate	LOMARIOPSIDACEAE
12a	Fronds (both sterile and fertile) simple or pinnatifid	13
12b	Fronds pinnate or more divided	18
13a	Sterile fronds simple, fertile fronds pinnatifid, sporangia borne on small fertile pinnae in a comblike arrangement at apex of a very narrowly, linear, simple frond	SCHIZAEACEAE
13b	Sterile and fertile fronds similar	14
14a	Fronds shallowly to deeply pinnatifid	POLYPODIACEAE
14b	Fronds simple, margin entire or subentire	15
15a	Sori acrostichoid or linear in grooves	16
15b	Sori discrete, round or linear, not in grooves	17
16a	Sori acrostichoid; fronds narrowly elliptic to spatulate, erect to arching	LOMARIOPSIDACEAE
16b	Sori borne in 2 narrow grooves; fronds very narrowly linear, pendent	VITTARIACEAE
17a	Sori round, indusiate, superficial on veins	DAVALLIACEAE
17b	Sori round or linear, exindusiate	POLYPODIACEAE
18a	Fertile and sterile segments obviously dimorphous	19
18b	Fertile and sterile segments similar	21
19a	Fertile and sterile segments borne on separate fronds	BLECHNACEAE
19b	Sporangia borne on modified segments of a single frond	20
20a	Sporangia borne on small, fertile pinnae at apex of frond	OSMUNDACEAE
20b	Sporangia borne on branched, basal pinnae	SCHIZAEACEAE
21a	Sori marginal or submarginal	22
21b	Sori superficial on undersurface of lamina	31
22a	Indusium opening outwards	23
22b	Indusium opening inwards towards costa	24
23a	Fronds opaque, more than 1 cell thick; sori subtended by teeth, indusium single	DAVALLIACEAE
23b	Fronds semitransparent, 1 cell thick, small; sori subtended by 2 indusial lobes	HYMENOPHYLLACEAE
24a	Sori linear with obvious linear indusium	25
24b	Sori discrete	28
25a	Fronds deeply flabellately divided	ADIANTACEAE
25b	Fronds pinnately divided	26
26a	Ultimate segments articulated	ADIANTACEAE
26b	Ultimate segments not articulated	27

27a	Veins obviously apparent or obscure, anastomosing freely to form areoles or free; lamina thickly coriaceous; rhizome set with hairs	DENNSTAEDTIACEAE
27b	Veins obscure or apparent, anastomosing or free; lamina herbaceous to thinly coriaceous; rhizome set with scales	ADIANTACEAE
28a	Ultimate segments petiolate	ADIANTACEAE
28b	Ultimate segments not petiolate	29
29a	Rhizome set with hairs; lamina pubescent or pilose	DENNSTAEDTIACEAE
29b	Rhizome set with scales; lamina glabrous or set with scales or tomentose, rarely pilose	30
30a	Sporangia conspicuous, annulus apical	SCHIZAEACEAE
30b	Sporangia inconspicuous, annulus vertical	ADIANTACEAE
31a	(21) Sori acrostichoid or exindusiate	32
31b	Sori indusiate	38
32a	Fronds falsely dichotomously branched due to abortion of apical buds	GLEICHENIACEAE
32b	Fronds not dichotomously branched	33
33a	Sori acrostichoid	LOMARIOPSIDACEAE
33b	Sori not acrostichoid	34
34a	Undersurface of frond densely paleaceous	ASPLENIACEAE
34b	Undersurface of frond glabrous, pilose or sparsely paleaceous	35
35a	Fronds proliferous	THELYPTERIDACEAE
35b	Fronds not proliferous	36
36a	Undersurface of fronds with white, yellow or orange powder	ADIANTACEAE
36b	Undersurface of fronds without powder	37
37a	Fronds glabrous	OSMUNDACEAE
37b	Fronds pubescent	THELYPTERIDACEAE
38a	(31) Sori subcircular	39
38b	Sori linear	43
39a	Lamina pinnate to 2-pinnate	40
39b	Lamina 3- or 4-pinnatifid	41
40a	Lamina simply pinnate	DAVALLIACEAE
40b	Lamina 2-pinnatifid to 2-pinnate	ASPIDIACEAE
41a	Lamina and rhachises set with hairs only	ASPIDIACEAE
41b	Lamina and rhachises glabrous or set with scales or both hairs and scales	42
42a	Fronds developed basiscopically, or if not, then fronds glabrous or paleaceous with indusium peltate	ASPIDIACEAE
42b	Fronds not developed basiscopically; paleaceous with indusium cupuliform or asymmetric; arborescent ferns	CYATHEACEAE
43a	Rhizome and stipe scales clathrate	ASPLENIACEAE
43b	Rhizome and stipe scales not clathrate	44
44a	Fronds simply pinnate	BLECHNACEAE
44b	Fronds 2-pinnatifid or more deeply divided	ATHYRIACEAE

ADIANTACEAE

Plants terrestrial. Rhizomes creeping or suberect, scaly. Fronds pinnate to quadripinnatifid. Sori covering undersurface of fertile pinnae or borne along veins or marginal to submarginal on undersurface of lamina. Indusium lacking, or false indusia formed by a reflexed marginal flap and then opening inwards. Spores trilete.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 91 (1986).

1a	Sori borne along veins	2
1b	Sori marginal or submarginal	3
2a	Lamina with orange, yellow or white powder on undersurface	Pityrogramma
2b	Lamina without powder on undersurface	Anogramma
3a	Sori borne on reflexed marginal flaps	Adiantum
3b	Sori borne on undersurface of lamina near margin and usually covered by it	4
4a	Fronds dichotomously flabellate	Actiniopteris
4b	Fronds pinnately divided	5
5a	Ultimate fertile segments with a distinct entire to serrate sterile apex	Pteris
5b	Ultimate fertile segments without a distinct sterile apex	6
6a	Ultimate segments of frond articulated	Pellaea
6b	Ultimate segments of frond not articulated	7
7a	Fronds pedate	Doryopteris
7b	Fronds not pedate	Cheilanthes

Actiniopteris Link (s. Afr.: 3 spp.) 0000290

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 148–149.

dimorpha Pic.-Serm.

Rhizome creeping, set with rhizome scales. Fronds dimorphic with fertile fronds much taller than sterile fronds, densely tufted. Fertile fronds entire, sterile frond segments with up to 7 teeth at apex. Lamina flabellate, dichotomously divided into segments. *Sori November to April*. Common on granite outcrops. *Smook 2661*.

W S C N E

radiata (J. König ex Sw.) Link

Rhizome creeping, set with rhizome scales. Fronds uniform or very weakly dimorphic, densely tufted. Stipe up to 135 mm long. Lamina flabellate with a truncate base, dichotomously divided into narrow linear segments, apex sharply dentate with 2–6 teeth. *Sori July to June*. Around dry rocky outcrops. *Venter 7194*.

W S C N E

Adiantum L. (s. Afr.: 6 spp.) 0000300

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 99–105.

capillus-veneris L.

Rhizome creeping, set with reddish brown, entire rhizome scales $\pm$ 3 mm long. Fronds 3-pinnate; veins of sterile pinnules ending in marginal teeth; pinnules cuculate, entire or irregularly shallowly to deeply lobed. *Sori oblong to lunate; August to May*. Shaded moist rock faces and crevices. *Jacobsen 4396*.

W S C N E

hispidulum Sw.

Rhizome erect to procumbent, set with rhizome scales up to 1.5 mm long. Fronds 2- or 4-pinnate, repeatedly and unequally dichotomously divided. Pinnules mostly rhombic, upper and outer margins irregularly crenate-dentate. *Sori February*. Moist shaded habitats. *Junod 4602*.

W S C N E

incisum Forssk.

Rhizome short, set with subulate rhizome scales. Fronds simply pinnate. Lamina pilose. Pinnae oblong, up to 20 $\times$ 10 mm, incised irregularly on acroscopic margin into mostly emarginate lobes. *Sori borne at apices of pinna lobes. Sori November to April*. Around boulders in forest. *Van Jaarsveld 6043*.

W S C N E

philippense L.

Rhizome short, suberect or creeping, set with subulate rhizome scales $\pm$ 3 mm long. Fronds simply pinnate. Lamina glabrous. *Sori borne on apices of pinna lobes*. Indusial flaps up to 20 mm long. On moist forest floor and earth banks, always in deep shade. No specimens in PRE.

W S C N E

poiretii Wikstr.

Rhizome creeping, set with appressed rhizome scales. Fronds 3- or 4-pinnate. Veins of sterile pinnules ending in sinuses between marginal teeth or crenations of teeth. Ultimate segments articulated, eventually deciduous. *Sori lunate; July to April*. Shaded floors of montane forest. *Scheepers 948*.

W S C N E

raddianum Presl*

Rhizome creeping, set with rhizome scales up to 1.5 mm long. Fronds 3- or 4-pinnate. Veins of sterile pinnules ending in sinuses between marginal teeth or crenations of teeth. Ultimate segments not articulated, persistent. *Sori orbicular; January*. Forest, stream-banks. Native to South America. *Junod 4049*.

W S C N E

Anogramma Link (s. Afr.: 1 sp.) 0000310

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 93–95.

Burrows. 1990. Southern African ferns and fern allies: 114–115.

leptophylla (L.) Link

Rhizome small, set with small brown scales. Fronds few, tufted, erect. Lamina up to 70 $\times$ 28 mm, 2- or 3-pinnatifid. Pinnae ovate-deltate. Stipe castaneous, up to 80 mm long. *Sori borne along the forked veins; April*. Base of quartzite cliffs in moist situations. *Burrows 3338*.

W S C N E

Cheilanthes Sw. (s. Afr.: 26 spp.) 0000340

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 111–140.

bergiana Schldtl.(= *Hypolepis bergiana* (Schldtl.) Hook.)

Rhizome short, erect, set with atrocastaneous rhizome scales. Lamina with outline pentagonal, herbaceous, set with hairs along costae and veins, venation apparent on upper surface, up to 300 $\times$ 280 mm, 3-pinnate to 5-pinnatifid. *Sori marginal; January to February*. Forest, deeply shaded habitats in undergrowth. *Scheepers 1192*.

W S C N E

botswanae Schelpe & N.C. Anthony

Rhizome suberect, set with pale brown concolorous and ebenous-striped rhizome scales. Stipe set with numerous scales at maturity, brown. Lamina thinly coriaceous, narrowly ovate, up to 120 $\times$ 50 mm, 2-pinnate to 3-pinnatifid. Ultimate segments narrowly hastate or oblong-acute. *Sori marginal; December to January*. Dry, rocky areas. *Breyer sub TRV 18051*.

W S C N E

contracta (Kunze) Mett. ex Kuhn

Rhizome long-creeping, set with atrocastaneous rhizome scales. Fronds spaced, most hairs on frond appressed or spreading at an angle of less than 90°. Lamina 2-pinnate to 3-pinnatifid. *Sori discrete, borne*

on ultimate lobes, obscured by revolute margin and lamina hairs. Around boulder bases and on rocky mountainsides. Wager 1480.

W S C N E

dolomiticola (*Schelp*) *Schelp* & N.C. Anthony
(= *Pellaea dolomiticola* Schelp)

Rhizome suberect, set with pale brown rhizome scales. Frond set with numerous serrulate scales. Lamina broadly elliptic to rotund, up to 85 × 40 mm, 2-pinnate to 3-pinnatifid. Pinna segments usually narrowly to broadly hastate. *Sori* marginal, linear; January to February. Crevices in dolomitic limestone outcrops. Kluge 2385.

W S C N E

eckloniana (*Kunze*) *Mett.*
(= *Notholaena eckloniana* Kunze)

Rhizome creeping, set with both concolorous and castaneous- to ebeneous-striped rhizome scales. Lamina tomentose below, ovate-oblong to lanceolate, up to 110 × 30 mm, 2-pinnate to 3-pinnatifid, not decrescent basally. Pinnae broadly deltate, set with hairs and scales. *Sori* August to May. Usually found on rocky outcrops with a south aspect or well-drained sites. Jacobsen 4392.

W S C N E

hirta Sw. *sens. lat.*

Rhizome very shortly creeping (suberect), set with pale, ferrugineous-, concolorous- and atrocastaneous-striped rhizome scales. Fronds tufted, most hairs on frond standing at right angles to surface. Lamina up to 340 × 55 mm, 2-pinnate to 3-pinnatifid. *Sori* discrete, borne on margins of incurved pinnule lobes, minute; July to June. Around boulder bases and rock crevices. Westfall 905.

W S C N E

inaequalis (*Kunze*) *Mett.* var. **inaequalis**
(= *Notholaena inaequalis* Kunze)

Rhizome short, creeping, set with concolorous and ferrugineous rhizome scales. Lamina outline generally oblong to ovate-deltate, 2-pinnatifid, undersurface tomentose with matted hairs. *Sori* July to June. Among rocks in open woodland. Vorster 2233.

W S C N E

inaequalis (*Kunze*) *Mett.* var. **buchananii** (*Baker*) *Schelp*

Rhizome short, creeping, set with concolorous and ferrugineous rhizome scales. Lamina outline generally pentagonal, 3-pinnatifid, undersurface pilose with straight hairs. *Sori* February to May. Amongst rocks in moist positions, usually under shade. Venter 12568.

W S C N E

involuta (Sw.) *Schelp* & N.C. Anthony var. **involuta**
(= *Pellaea viridis* (Forssk.) Prantl var. *involuta* (Sw.) Schelp)

Rhizome shortly creeping, set with rhizome scales up to 6 mm long. Stipe set with numerous scales at maturity, atrocastaneous. Lamina outline linear to lanceolate, up to 160 × 40 mm. Sulci of stipe and rhachis rounded.

Ultimate segments unequally oblong-hastate. *Sori* borne on proximal margins; January to May. On dry, rocky, shrubby slopes. Venter 9075.

W S C N E

involuta (Sw.) *Schelp* & N.C. Anthony var. **obscura**
(N.C. Anthony) N.C. Anthony
(= *Cheilanthes viridis* (Forssk.) Sw. var. *obscura* N.C. Anthony)

Rhizome creeping, ± 4 mm in diameter. Stipe set with numerous scales at maturity, atrocastaneous. Lamina outline subdeltate. Sulci of stipe and rhachis flat to square. *Sori* November to June. Around rocky outcrops and boulder bases. Bredenkamp 1667.

W S C N E

marlothii (*Hieron.*) *Schelp*
(= *Notholaena marlothii* Hieron.)

Rhizome shortly creeping, set with pale ferrugineous rhizome scales. Lamina tomentose below, ovate-oblong to lanceolate, ± 100–300 × 20–50 mm, 2-pinnate to 3-pinnatifid, decrescent basally. Pinnae narrowly deltate to ovate-deltate, set with hairs only. *Sori* January to March. In rock crevices and around boulder bases. Kluge 2377.

W S C N E

multifida (Sw.) Sw. subsp. **lacerata** N.C. Anthony & *Schelp*

Rhizome short, set with stramineous to somewhat ferrugineous, concolorous rhizome scales. Indusium deeply lacerate. Lamina oblong-ovate to somewhat deltate, up to 320 × 280 mm, 4- or 5-pinnatifid, glabrous. *Sori* discrete, borne around margins of ultimate segments; July to June. On rocky slopes around boulder bases and in rock crevices. Van der Schijff 5408.

W S C N E

nielsii *Jacobsen*

Rhizome erect, with rhizome scales linear, dark brown. Lamina narrowly oblong-elliptic, 75–140 × 25–53 mm, deeply 2-pinnatifid to 2-pinnate with lower pinnae reduced in size. Pinnules or ultimate lobes oblong. *Sori* discrete, set beneath slightly inrolled margin. Rocky hillsides. Jacobsen 5126.

W S C N E

parviloba (Sw.) Sw.

Rhizome creeping, set with castaneous rhizome scales. Lamina glabrous and viscid on both surfaces, ovate-lanceolate, ± 250 × 40 mm, 2-pinnate to 3-pinnatifid. Pinnules pinnatifid into oblong, often bilobed segments. *Sori* protected by revolute margin of lamina; February to March. Dry rocky slopes and rock crevices. Acocks 23598.

W S C N E

pentagona *Schelp* & N.C. Anthony

Rhizome creeping, set with ferrugineous rhizome scales. Lamina hastate-pentagonal, often broader than long, 5-pinnatifid. Ultimate segments unequally deltate, venation

apparent on both surfaces. *Sori discrete; January to May*. Dolomitic rock crevices. *Stalmans 572*.

W S C N E

quadrupinnata (Forssk.) Kuhn

Rhizome shortly creeping, set with ferrugineous, concolorous rhizome scales. Lamina 3- to 5-pinnate, pentagonal in outline, basal pinnae nearly as long as or longer than lamina and conspicuously developed basiscopically. Indusium continuous. Ultimate segments oblong, 10–20 mm long. *Sori July to June*. Forest margins and around boulder bases in grassland or scrub. *Kluge 727*.

W S C N E

viridis (Forssk.) Sw. var. **viridis**

(= *Pellaea viridis* (Forssk.) Prantl var. *viridis*)

Rhizome creeping, set with light brown to ferrugineous rhizome scales. Bases of secondary rhachises and petiolules pubescent with short, unicellular to multicellular patent hairs, sometimes extending to lower surface of lamina and costule. Lamina 2-pinnate to 4-pinnate, pinnae up to $\pm 20 \times 7$ mm. *Sori marginal; July to June*. Forest margins and semishaded habitats. *Hemm 368*.

W S C N E

viridis (Forssk.) Sw. var. **glauca** (Sim) Schelpe & N.C. Anthony

Rhizome creeping, set with light brown to ferrugineous, mostly atrocastaneous-striped rhizome scales. Secondary rhachises and petiolules glabrous or set with filiform appressed scales. Lamina 2-pinnate to 4-pinnatifid, $\pm 200 \times 80$ mm. *Sori borne in a marginal soral line; September to May*. Grass- and shrubland, rocky outcrops and boulder bases. *Galpin 9121*.

W S C N E

viridis (Forssk.) Sw. var. **macrophylla** (Kunze) Schelpe & N.C. Anthony

(= *Pellaea viridis* (Forssk.) Prantl var. *macrophylla* (Kunze) Sim)

Rhizome creeping, set with pale brown to ferrugineous, mostly castaneous- to ebeneous-striped rhizome scales. Bases of secondary rhachises and petiolules pubescent with short, unicellular to multicellular, patent hairs, sometimes extending to lower surface of lamina and costule. Lamina 2- or 3-pinnate, pinnae $\pm 30 \times 15$ mm. *Sori October*. Forest. *Codd & De Winter 146*.

W S C N E

Doryopteris Sm. (s. Afr.: 2 spp.) 0000350

Burrows. 1990. Southern African ferns and fern allies: 155–157.
Burrows & Strauss. 1990. *Bothalia* 20: 221–222.

concolor (Langsd. & Fisch.) Kuhn

(= *Cheilanthes concolor* (Langsd. & Fisch.) R.M. & A.F. Tryon)

Rhizome short, procumbent, set with pale brown rhizome scales. Lamina broadly hastate-pentagonal, almost as broad as long, up to 120×110 mm. Basal pinnac the largest and conspicuously developed basiscopically. *Sori marginal, discrete or continuous; Oc-*

tober to May. Kloofs, riverbanks, under trees or shrubs and woodland. *Kluge 2408*.

W S C N E

pilosa (Poir.) Kuhn var. **gemmifera** J.E. Burrows & Strauss

Rhizome short, suberect with rhizome scales pale brown, linear-lanceolate. Fronds strongly dimorphic, hirsute, proliferous at base of lamina. Lamina ovate to weakly pentagonal in outline, upper surface lightly covered with pale hairs, lower surface more densely set with hairs. *Sori October to May*. Mountainsides. *Strauss 17*.

W S C N E

Pellaea Link (s. Afr.: 6 spp.)

0000360

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 140–148.

boivinii Hook.

Rhizome suberect, set with nitid, castaneous to ferrugineous rhizome scales. Ultimate segments narrowly oblong-ovate, $\pm 10 \times 3$ mm. Lamina generally 3-pinnate, up to 180×140 mm. *Sori forming a marginal line; September to May*. Around boulder bases and sheltered cliff crevices. *Jacobsen 4370*.

W S C N E

calomelanos (Sw.) Link var. **calomelanos**

Rhizome, set with atrocastaneous rhizome scales. Lamina 3-pinnate. Pinnules cordate to broadly hastate with 3 to 5 acute or obtuse points, glaucous, petiolate. *Sori forming a marginal line; July to June*. In rocky habitats. *Viljoen 121*.

W S C N E

dura (Willd.) Hook.

Rhizome, set with ferrugineous rhizome scales. Ultimate segments lanceolate, $\pm 40 \times 9$ mm. Lamina 2-pinnate, lanceolate to ovate, up to 250×110 mm. *Sori forming a marginal line; July to June*. Shady places under rock overhang and rock crevices. *Venter 1093*.

W S C N E

pectiniformis Baker

(= *P. goudotii* Kunze ex C. Chr.)

Rhizome creeping, set with castaneous rhizome scales. Lamina simply pinnate, narrowly oblong, up to $50 \times 1,5$ mm. Indusium continuous. *Sori linear; July to June*. Amongst boulders in light shade. *Kluge 1017*.

W S C N E

Pityrogramma Link (s. Afr.: 3 spp.) 0000370

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 97–99.

argentea (Willd.) Domin

Rhizome erect, set with entire rhizome scales up to 2 mm long. Fronds broadly deltate, brittle. Ultimate segments obtuse. Lamina 3- or 4-pinnatifid, up to 210×160 mm. Pinnules and pinnule segments with undersur-

face powder white, pink or yellow. *Sori linear, up to 2 mm long; July to June.* Rock crevices and boulder bases. *Strey 7909.*

W S C N E

calomelanos (Sw.) Link var. **aereoflava** (Hook.) Weath. ex Bailey

Rhizome short, procumbent, set with linear rhizome scales up to 4 mm long. Fronds oblong-lanceolate, robust. Ultimate segments acute-acuminate. Lamina 2-pinnate to 3-pinnatifid. Pinna segments oblong-trapeziform, serrate, with yellow powder. *Sori June.* Rock crevices. *Scheepers sub PRE 38999.*

W S C N E

Pteris L. (s. Afr.: 7 spp.) 0000380

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 105–110.

buchananii Baker ex Sim

Rhizome widely creeping, set with dark brown rhizome scales. Lamina 4-pinnatifid with basal pinnae. Ultimate lobes adnate to rachis and decurrent, up to 26 × 5 mm. Sterile lobes and apices of fertile lobes serrate. *Sori October to June.* Forest and vleis. *Kluge 811.*

W S C N E

catoptera Kunze

Rhizome erect to procumbent, set with atrocastaneous rhizome scales. Costules, as well as costae, spinous above. Sterile apices of fertile and sterile lobes entire. *Sori in marginal lines; July to June.* Moist and variously shaded habitats in forest undergrowth or along forest margins. *Hemm 168.*

W S C N E

cretica L.

Rhizome creeping, set with dark brown rhizome scales. Upper pinnae simple (not pinnatifid), lower pinnae with 1 or 2 basiscopic lobes. Pinnae linear-attenuate, bluntly to sharply serrate-dentate. *Sori in marginal lines; December to June.* Undergrowth and margins of forest. *Van Jaarsveld 478A.*

W S C N E

dentata Forssk.

(= *P. dentata* Forssk. subsp. *flabellata* (Thunb.) Runemark)

Rhizome erect to procumbent, set with atrocastaneous rhizome scales. Lamina ovate, up to 1 × 0,4 m, usually 3-pinnatifid. Basal pinnae shorter than lamina. Sterile apices of fertile and sterile lobes crenate-dentate. *Sori November to May.* Forest undergrowth. *Mohle 190.*

W S C N E

friesii Hieron.

Rhizome erect to procumbent, set with rhizome scales with pale ciliate-fimbriate borders. Costae spinous above. Sterile apices of fertile and sterile lobes entire. *Sori in marginal lines; October.* Undergrowth of scrub and forest. *Theron 1871.*

W S C N E

vittata L.

Rhizome creeping, set with pale brown rhizome scales. Upper pinnae simple (not pinnatifid), lower pinnae all simple, gradually reduced. Pinnae linear-attenuate. *Sori in submarginal lines extending for most of length of fertile pinnae; July to May.* Rock crevices in shade. *Kluge 2342.*

W S C N E

ASPIDIACEAE

Tall terrestrial plants. Rhizome erect, ascending or creeping. Fronds pinnate to quadripinnatifid, glabrous, scaly or hairy, costae and costules decurrent on rachises or raised on lower surface. Pinnules usually unequally sided at base. Sori on veins.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 240 (1986).

- | | | |
|----|--|----------------------|
| 1a | Pinna costa (or secondary rhachises) with raised edges on upper surface | 2 |
| 1b | Pinna costa without raised edges on upper surface | 5 |
| 2a | Pinnules dimidiate, articulated; sori oblong-elliptic | Didymochlaena |
| 2b | Pinnules neither dimidiate nor articulated; sori circular | 3 |
| 3a | Indusia peltate; lower pinnae not developed basiscopically | Polystichum |
| 3b | Indusia reniform; lower pinnae often developed basiscopically | 4 |
| 4a | Pinnule margins crenate to serrate; basal pinnae not as long as lamina | Dryopteris |
| 4b | Pinnule margins aristate-dentate; basal pinnae almost as long as lamina itself | Arachniodes |
| 5a | Lamina pinnate | Cyrtomium |
| 5b | Lamina 2- or 4-pinnatifid | 6 |
| 6a | Indusium basal, cup-shaped at maturity | Woodsia |
| 6b | Indusium peltate or reniform | 7 |
| 7a | Veins anastomosing | Tectaria |
| 7b | Veins free | 8 |
| 8a | Indusia peltate; lamina glabrous | Rumohra |
| 8b | Indusia reniform; lamina pubescent or pilose | 9 |

- 9a Indusia densely pilose with long, white, unicellular hairs; upper surface of costae pilose with unicellular hairs **Hypodematum**
 9b Indusia glabrous, pubescent or very thinly pilose; upper surface of costae densely set with short multicellular hairs **Ctenitis**

Arachniodes Blume (s. Afr.: 1 sp.) 0000590

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 259–261.

foliosa (C. Chr.) Schelpe

Rhizome creeping, up to 7 mm in diameter, set with brown rhizome scales. Pinna costa with raised edges on upper surface. Indusia reniform. Pinnule margins aristate-dentate. Basal pinnae almost as long as lamina itself. Lamina up to 400 × 300 mm. Fronds tufted. *Sori circular; October to May*. Deep shade along forest streambanks. *Jacobsen 4427*.

W S C N E

Ctenitis (C. Chr.) C. Chr. ex Tardieu
(s. Afr.: 1 sp.) 0000600

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 264.

lanuginosa (Willd. ex Kaulf.) Copel.

Rhizome erect, forming a trunk up to 450 mm tall and 150 mm in diameter, set with golden brown rhizome scales. Indusia glabrous, pubescent or very thinly pilose. Upper surface of costae densely set with short multicellular hairs. Fronds tufted. Stipe up to 1 m long. Lamina broadly deltate-ovate, ± 1,3 × 1,2 m, 2- or 4-pinnatifid. *Sori December to June*. On marshy streambanks in forest, usually in dense shade. *Kluge 2257*.

W S C N E

Cyrtomium Presl (s. Afr.: 1 sp.) 0000605

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 251.

caryotideum (Wall. ex Hook. & Grev.) Presl var. **micropterum** (Kunze) C. Chr.

(= *Phanerophlebia caryotideum* (Wall. ex Hook. & Grev.) Copel. var. *micropteris* (Kunze) Tardieu)

Rhizome short, ascending to erect, densely scaly with broad, entire to lacerate rhizome scales. Fronds firmly herbaceous. Lamina imparipinnate or with pinnatifid apex. Veins anastomosing. Indusium petate, persistent or caducous or apparently absent. *Sori dorsal or sometimes terminal on veins; July to June*. In shade on forest floors and along streambanks. *Kluge 1861*.

W S C N E

Didymochlaena Desv. (s. Afr.: 1 sp.) 0000610

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 243.

truncatula (Sw.) J. Sm.

Rhizome erect, forming a caudex up to 200 mm tall and 150 mm in diameter, set with rhizome scales. Pinna costa with raised edges on upper surface. Pinnules dimidiate, articulated. Lamina oblong-ovate, up to 1 × 0,45 m,

2-pinnate. Stipe up to 500 mm. *Sori oblong-elliptic*. In forest and shade along streambanks. *Kluge 2258*.

W S C N E

Dryopteris Adans. (s. Afr.: 6 spp.) 0000620

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 245–250.

athamantica (Kunze) Kuntze

Rhizome shortly creeping, 15 mm in diameter, set with ferruginous rhizome scales. Fronds 3-dimensional with suberect pinnae set at an angle of less than 45° to rachis. Pinnules narrowly and unequally deltate to oblong-acute, pinnatifid into acutely serrate-dentate ultimate segments. *Sori October to July*. Grassland, moist depressions and around boulders. *Repton 3451*.

W S C N E

inaequalis (Schidl.) Kuntze

Rhizome creeping, set with ferruginous rhizome scales. Fronds 2-dimensional with pinnae set at an angle of more than 45° to rachis. Lamina set with scattered hairlike scales below. Pinnules pinnatifid into oblong, obtuse to truncate lobes. *Sori July to June*. Forest and moist shaded situations. *Stirton 10562*.

W S C N E

squamiseta (Hook.) Kuntze

Rhizome suberect, set with brown rhizome-scales. Fronds 2-dimensional with pinnae set at an angle of more than 45° to rachis. Stipe and rachis set with numerous patent dark brown scales. *Sori borne distally on each pinnule; January to July*. Streambanks and marshy situations in deep shade in forest. *Schelpé 6048*.

W S C N E

Hypodematum Kunze (s. Afr.: 1 sp.) 0000630

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 263.

crenatum (Forssk.) Kuhn

Rhizome creeping, densely set with lanceolate-acuminate rhizome scales. Indusia reniform, densely pilose with long white unicellular hairs. Upper surface of costae pilose with unicellular hairs. Lamina ovate-deltate, up to 330 × 300 mm. *Sori up to 12 per pinnule; February to May*. Dolomitic cliffs and montane grassland. *Venter 10686*.

W S C N E

Polystichum Roth (s. Afr.: 8 spp.) 0000650

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 251–259.

alticola Schelpe & N.C. Anthony

Rhizome erect, set with ferrugineous rhizome scales. Lamina 2-pinnate. Rhachis scales ferrugineous. Basal basiscopic arista of each pinnule folded over upper surface of lamina. Fronds narrowly ovate-lanceolate. Stipe and rhachis set with numerous ovate scales, aristae ± 1 mm long. *Sori November to March*. Damp to marshy, usually rock-sheltered localities. *Devenish 638*.

W S C N E

luctuosum (Kunze) T. Moore

Rhizome erect to suberect, set with dark brown rhizome scales. Lamina 2-pinnate, ovate-attenuate, $\pm 380 \times 115$ mm. Rhachis scales suffused with pigment, appearing dark brown to almost black. *Sori August to May*. Shady kloofs and forest floors. *Kluge 2320*.

W S C N E

macleae (Baker) Diels

Rhizome creeping. Lamina pinnate. Pinnae up to 170×25 mm, broadly linear, serrate-dentate except for a basal acroscopic lobe. *Sori round, in 1 or 2 lines on both sides of costa; July to June*. Forest, streambanks and around exposed boulder bases. *Mohle 288*.

W S C N E

pungens (Kaulf.) Presl

Rhizome creeping, set with ferrugineous rhizome scales. Lamina 2-pinnate. Rhachis scales pale brown. All aristae on each pinnule directed away from lamina. Each pinnule subtended below by an ovate-attenuate bullate scale. Indusium persistent. *Sori December to January*. Forest floors and ravines. *Schweickerdt sub TRV 1852C*.

W S C N E

transkeiense W. Jacobsen

Rhizome long-creeping, set with brown rhizome scales. Lamina 2-pinnate. Rhachis scales pale brown. All aristae on each pinnule directed away from lamina. Each pinnule subtended below by an ovate-attenuate, bullate scale. Indusium evanescent. Forest floors and ravines. *Burrows 3150*.

W S C N E

transvaalense N.C. Anthony

Rhizome erect. Lamina 2-pinnate. Rhachis scales ferrugineous. Basal basiscopic arista of each pinnule

folded over upper surface of lamina. Fronds ovate-truncate, herbaceous, aristae $\pm 0,5$ mm long. *Sori July to June*. Streambanks in forest. *Scheepers 419*.

W S C N E

Rumohra Raddi (s. Afr.: 1 sp.) 0000660

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 261–263.

adiantiformis (G. Forst.) Ching

(= *Polystichum adiantiforme* (G. Forst.) Sm.)

Rhizome creeping, ± 8 mm in diameter, set with reddish brown, erose rhizome-scales. Lamina 3-pinnate to 4-pinnatifid, $300\text{--}900 \times 100\text{--}300$ mm, glabrous. Pinnules ovate-deltate, margin crenate-dentate. Indusia peltate. *Sori ± 2 mm in diameter, numerous; July to June*. Open undergrowth in shade of forest and forest margins and in rocky ravines. *Kluge 1690*.

W S C N E

Tectaria Cav. (s. Afr.: 1 sp.) 0000670

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 265.

gemmifera (Fée) Alston

Rhizome erect, up to 20 mm in diameter, set with dark brown rhizome scales. Veins anastomosing. Fronds arching, with proliferating bulbils up to 10 mm in diameter on costae and costules. Lamina ovate-triangular, up to $0,9 \times 0,6$ m, 3-pinnatifid, pubescent on both surfaces. Indusium membranous. *Sori December to February*. Moist forest floors and deep kloofs. *Kluge 2397*.

W S C N E

Woodsia R. Br. (s. Afr.: 2 sp.) 0000680

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 240–242.

montevicensis (Spreng.) Hieron. var. **burgessiana** (Gerrard ex Hook. & Baker) Schelpe

Rhizome creeping, set with subentire rhizome scales. Indusium basal, cup-shaped at maturity. Stipe with numerous, persistent scales at base. Lamina pinnate to 2-pinnatifid; pinnatifid segments closely spaced or overlapping, narrowly ovate-lanceolate, $90\text{--}300 \times 30\text{--}80$ mm. *Sori December to April*. Rocky situations. *Jacobsen 1442*.

W S C N E

ASPLENIACEAE

Plants terrestrial, often epiphytic or lithophytic. Rhizomes creeping or erect; scales usually dark, clathrate. Stipe with 2 vascular strands at base, uniting upwards to form a 4-armed single strand, not articulated to rhizome. Laminae simple, pinnate or pluripinnate. Sori usually set at an oblique angle to costa, if parallel then pinnae lobed or serrate, elongate with or without similarly shaped indusia.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 173 (1986).

Undersurface of pinnae glabrous or set with scattered, small scales **Asplenium**
 Undersurface of pinnae set with dense, imbricate scales **Ceterach**

Asplenium L. (s. Afr.: 29 spp.) 0000520

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 173–205.

adiantum-nigrum L. var. adiantum-nigrum

Rhizome creeping, set with dark brown rhizome scales. Lamina deltate to ovate-lanceolate, up to 150 mm long, 2-pinnate to shallowly 3-pinnatifid. Pinnules obcuneate, oblong or obovate. Ultimate segments rounded and evenly dentate with numerous (usually 6–20) small teeth. Indusium entire. *Sori September to January*. Crevices in exposed rock outcrops to shaded forest floors. *Mogg 18081*.

W S C N E

aethiopicum (Burm. f.) Bech.

(= *Trichomanes aethiopicum* Burm. f.)

Rhizome ascending or creeping, set with ferruginous to atrocastaneous rhizome scales. Fronds tufted, set with numerous scales, with long hair points. Pinnae deeply pinnatifid into more than 5 lobes, acute to caudate. *Sori of irregular lengths, up to 9 mm long; June to July*. Lithophytic, epiphytic or terrestrial in forest. *Codd & Dyer 9104*.

W S C N E

anisophyllum Kunze

Rhizome erect, set with pale brown to brown rhizome scales. Pinnae with margins bluntly serrate, base unequally cuneate, up to 220 × 24 mm. *Sori borne along outermost branch vein of a fork, all of similar lengths; June to July*. Epiphytic, lithophytic or terrestrial on forest floor. *Mohle 189*.

W S C N E

boltonii Hook. ex Schelpe

Rhizome erect, set with reddish castaneous rhizome scales. Pinnae margins with alternating deeper and shallower incisions. Fronds gemmiferous. Straight basiscopic edge very much shorter than pinna itself. *Sori borne along outermost branch vein of a fork; June to July*. Forest, forest floors and humus-covered boulders. *Van Jaarsveld 511*.

W S C N E

erectum Bory ex Willd. var. erectum

Rhizome erect, set with dark brown rhizome scales. Lamina narrowly elliptic, up to 400 × 55 mm, decrescent basally; margin unequally incised to form multifid lobes, alternating deeper and shallower incisions. Basal auricle of lower pinnae not free. *Sori June to July*. Forest floors in shade. *Kluge 2311*.

W S C N E

erectum Bory ex Willd. var. usambarense (Hieron.)

Schelpe

Rhizome erect, set with dark brown rhizome scales. Lamina linear-elliptic, up to 400 × 55 mm, decrescent basally; margin serrate. Basal auricle of lower pinnae free. *Sori July to February*. Shaded forest floors. *Codd & De Winter 147*.

W S C N E

friesiorum C. Chr.

Rhizome creeping, set with brown rhizome scales. Fronds widely spaced. Pinnae linear-attenuate, base unequally cuneate, margin serrate to shallowly lobed with oblong serrate lobes. *Sori borne in 2 rows closely set along costa; June to July*. Forest undergrowth. *Stalmans 1615*.

W S C N E

gemmiferum Schrad.

Rhizome erect, set with dark brown rhizome scales. Pinnae with margins evenly and shallowly crenate-serrate, ovate-lanceolate, acuminate. *Sori extending from near costa two-thirds to margin, up to 15 mm long; January to December*. Forest floors and on humus-covered boulders in deep shade. *Stalmans 128*.

W S C N E

hypomelas Kuhn

Rhizome erect, often long, set with narrowly lanceolate, hair-pointed rhizome scales. Lamina conspicuously expanded at sorus. *Sori as long as broad, extending from costa to margin, ± 1,2 mm long*. Low-level epiphyte in dense shade in moist forest. *Mogg sub J41513*.

W S C N E

inaequilaterale Willd.

Rhizome erect, set with dark brown rhizome scales. Pinna with margin unequally incised to form multifid lobes, alternating deeper and shallower incisions, simple. Lamina membranous to herbaceous, up to 320 × 130 mm, not decrescent basally. *Sori January to December*. Forest floors and streambanks in dense shade. *Mohle 270*.

W S C N E

lividum Mett. ex Kuhn

Rhizome suberect, up to 7 mm in diameter, set with brown rhizome scales, ± 3 mm long. Fronds tufted, with few scales, without long hair-points, weakly 2-pinnatifid. Indusium membranous, entire, ± 0,4 mm broad. *Sori 1–7 per lobe, ± 5 mm long; February*. Lithophytic on humus-covered boulders in forest. *Junod 4039A*.

W S C N E

lobatum *Pappe & Rawson*

Rhizome erect, up to 7 mm in diameter, set with dark brown, lanceolate-acuminate rhizome scales. Lamina narrowly elliptic, margin crenate or obtusely dentate. Lower pinnae gradually decrescent. *Sori 3–6 per pinule; July to June*. On deeply shaded floors of moist forest and occasionally a low-level epiphyte. *Kluge 2206*.

W	S	C	N	E
---	---	---	---	---

lunulatum *Sw.*

Rhizome erect, set with dark brown to black rhizome scales. Proliferating bud borne on rhachis on or below terminal segment. Pinnae oblong-obtuse, falcate, base forming an angle of 90°, auriculate, basiscopic margin perpendicular to rhachis. *Sori found on unforked veins; October to December*. Forest. *Kluge 2147*.

W	S	C	N	E
---	---	---	---	---

monanthes *L.*

Rhizome erect to suberect, set with black rhizome scales. Stipe castaneous, nitid. Fertile pinnae bearing 1 (or at most 2) sori. Pinnae oblong-falcate, becoming broadly cuneate-flabellate basally, margin prominently crenate-dentate. Lamina linear, up to 300 × 25 mm. *Sori September to May*. Shaded forest floors and gullies. *Fraser sub LN2002*.

W	S	C	N	E
---	---	---	---	---

platyneuron (*L.*) *Oakes*

Rhizome erect to suberect, set with dark brown to black rhizome scales. Pinnae subsessile, base broadened and overlapping rhachis, margin somewhat irregularly crenate-serrate. Lamina linear, ± 240 × 26 mm, with lower pinnae decrescent. *Sori November*. Forest floors, streambanks and shady ledges. *Brendenkamp 267*.

W	S	C	N	E
---	---	---	---	---

preussii *Hieron. ex Brause*

Rhizome erect, ± 7 mm in diameter, set with dark brown, entire rhizome scales ± 4 mm long with narrow paler margins. Basiscopic pinna-lobes 6 or more, the first arising between first and second acroscopic lobes. Pinnae ovate-lanceolate. Uncommon in deep forest shade, terrestrial, lithophytic on mossy boulders or a low-level epiphyte. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

protensum *Schrad.*

Rhizome ascending, set with dark brown rhizome scales. Fronds gemmiferous. Proliferating bud borne on rhachis on or below terminal segment. Rhachis pubescent below. Lamina up to 650 × 130 mm. Pinnae shallowly pinnatifid; lobes usually 2- or 3-fid. *Sori borne between costa and lobes; December to February*. A lithophyte on mossy boulders in deep shade in forest. *Kluge 2398*.

W	S	C	N	E
---	---	---	---	---

rutifolium (*P.J. Bergius*) *Kunze*

Rhizome erect, set with dark brown rhizome scales. Sori lateral on ultimate segments, more than twice as long as broad. Lamina not expanded at sorus, narrowly elliptic-acute, up to 450 × 130 mm, deeply 3- or 4-pinnatifid. *Sori December to August*. Epiphyte in forest, occasionally terrestrial or lithophytic. *Kluge 2403*.

W	S	C	N	E
---	---	---	---	---

sandersonii *Hook.*

Rhizome erect, ± 3 mm in diameter, set with brown rhizome scales. Fronds gemmiferous on rhachis. Proliferating bud borne at end of an extension of rhachis. Pinnae in up to 32 pairs, rhombic-dimidiolate to cuneate tending to lunate, outer margin shallowly lobed into usually 4–6(–9) entire, obtuse lobes. *Sori oblong to semicircular; July to April*. Epiphytic or lithophytic in forest. *Vorster 602*.

W	S	C	N	E
---	---	---	---	---

simii *A.F. Braithw. & Schelpe*

Rhizome erect, ± 5 mm in diameter, set with black hair-pointed rhizome scales ± 8 mm long. Fronds tufted. Lamina narrowly oblong, acute, ± 280 × 130 mm. Pinnae deeply pinnatifid into 3 to 5 lobes. On boulders and old stumps. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

splendens *Kunze*

Rhizome creeping, set with dark brown rhizome scales. Venation flabellate. Fronds not gemmiferous, widely spaced on rhizome. Lamina subovate, up to 370 × 180 mm, 2- or 3-pinnate. Pinnae subdivided into as many as 16 cuneate, rounded trapeziform pinnules. *Sori June to July*. Forest floors. *Kluge 2207*.

W	S	C	N	E
---	---	---	---	---

stoloniferum *Bory*

(= *A. kraussii* T. Moore)

Rhizome erect, set with dark brown rhizome scales. Plants stoloniferous with naked stolons. Stipe green. Lamina linear, ± 120 × 16 mm. Pinnae oblong to rhombic or deltate, base forming an angle of ± 90°, outer margins sharply dentate. Lithophytic or epiphytic in forest shade. *Acocks 11526*.

W	S	C	N	E
---	---	---	---	---

theciferum (*Humb., Bonpl. & Kunth*) *Mett.* var. **concinnum** (*Schrad.*) *Schelpe*

(= *Loxoscaphe theciferum* (Kunze) T. Moore var. *concinnum* C. Chr.)

Rhizome erect, set with dark brown rhizome scales. Sori almost terminal on ultimate segments. Lamina narrowly ovate to elliptic, up to 1890 × 45 mm, deeply 2-pinnatifid to 3-pinnatifid. Pinnae oblong to trapeziform. *Sori August to April*. Epiphytic or lithophytic in forest. *Stalmans 677*.

W	S	C	N	E
---	---	---	---	---

trichomanes *L.*

Rhizome erect, set with dark brown rhizome-scales. Pinnae shortly petiolate, broadly oblong-circular, un-

equally cuneate base forming an angle of 90°, outer margin crenate to dentate. Lamina narrowly linear, up to 150 × 15 mm. *Sori* April. Rock crevices and boulder bases. *Bredenkamp 800.*

W S C N E

varians Wall. *ex* Hook. & Grev. subsp. **fimbriatum** (Kunze) Schelpe

Rhizome erect, set with dark brown rhizome scales. Lamina narrowly ovate, up to 170 × 80 mm, 2-pinnate. Pinnules and pinnule-lobes obovate, ± 6 mm long, outer margin sharply dentate. Indusium membranous, erose. *Sori* 2 to 5 per lobe; December to May. Mossy shaded boulders or in cracks. *Jacobsen 4364.*

W S C N E

Ceterach DC. (s. Afr.: 1 sp.)

0000530

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 206–207.

cordatum (Thunb.) Desv.

Rhizome erect, short, up to 4 mm in diameter, set with dark brown, irregularly fimbriate rhizome scales. Under-surface of pinnae set with dense imbricate scales, upper surface glabrous. Pinnae narrowly oblong, up to 28 × 9 mm, venation obscure. *Sori* linear, borne in 2 rows along-side and at an angle to costa; smaller *sori* also borne on pinnatifid segments; August to May. Boulder bases and under bushes. *Leach & Bayliss 13279.*

W S C N E

ATHYRIACEAE

Plants often large and attractive, in some cases resembling small tree ferns, terrestrial. Usually with a stout, erect rhizome which may form a caudex, rarely with a creeping rhizome. Laminae pinnate to quadripinnate. Rhachis and costae grooved. Veins free or anastomosing. *Sori* round, elongate or J-shaped, with or without indusia, along veins.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 221 (1986).

- 1a *Sori* round; with obvious, round, dentate indusia; frond shorter than 0.5 m **Cystopteris**
- 1b *Sori* elongate or J-shaped 2
- 2a *Sori* elongate or J-shaped, never back to back **Athyrium**
- 2b *Sori* elongate, at least some back to back 3
- 3a Rhizome creeping; fronds 2-pinnatifid **Lunathyrium**
- 3b Rhizome erect; fronds 3-pinnatifid **Diplazium**

Athyrium Roth (s. Afr.: 2 spp.) 0000540

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 221–225.

scandicium (Willd.) Presl

Rhizome erect, up to 5 mm in diameter, set with brown rhizome scales. Basal pinnae hardly or not reduced. Fronds tufted. Stipe set with scattered scales, up to 0.55 m long. Lamina narrowly ovate, up to 0.51 × 0.34 m, 3-pinnatifid to 3-pinnate. *Sori* oblong, curved to J-shaped; June to July. Forest and heavily shaded situations. *Kluge 2336.*

W S C N E

schimperii Mougl. *ex* Fée

Rhizome creeping, up to 6 mm in diameter, set with reddish brown rhizome scales. Basal pinnae reduced in size. Fronds closely spaced. Stipe up to 0.38 m long. Lamina oblong-lanceolate, up to 0.70 × 0.28 m, deeply 3-pinnatifid. *Sori* oblong, curved to J-shaped; February. Around exposed boulders in moist situations or rarely in light shade in forest. *Wager 80.*

W S C N E

Cystopteris Bernh. (s. Afr.: 1 sp.) 0000550

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 229–230.

fragilis (L.) Bernh.

(= *Polypodium fragile* L.)

Rhizome shortly creeping, dictyostelic, set with lanceolate brown rhizome scales. Stipe stramineous to castaneous. Lamina herbaceous, 2- to 4-pinnatifid, glabrous, veins free. *Sori* dorsal on veins, round, without paraphyses. Indusia peltate. Spores reniform, smooth. *Sori* November to May. In moist shaded habitats. *Jacobsen 4375.*

W S C N E

Diplazium Sw. (s. Afr.: 1 sp.)

0000560

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 227.

zanzibaricum (Baker) C. Chr.

Rhizome erect, up to 400 mm tall and 150 mm in diameter, set with somewhat fimbriate rhizome scales. *Sori* elongate. Fronds 3-pinnatifid. Stipe pale brown when dry, up to 1 m long. Lamina broadly ovate, acute, up to 1.5 × 1.4 mm, rhachis pale brown. *Sori* July. Forest and streambanks. *Kluge 2394.*

W S C N E

Lunathyrium Koidz. (s. Afr.: 1 sp.) 0000567

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 225.

japonicum (*Thunb.*) *Kurata**

Rhizome creeping, scaly. Fronds closely or widely spaced. Stipe base swollen or not. Lamina not pentagonal in outline, pinnatifid to 2-pinnatifid, decrescent or not. Sori curved, narrowly oblong, straight or occasion-

ally J-shaped. Indusium lateral. Terrestrial in forest along streambanks in light to deep shade. Native to China, Japan, Polynesia, New Zealand, Australia, Thailand, Malaysia and India. No specimens in PRE.

W S C N E

AZOLLACEAE

Small, aquatic, floating plants. Roots borne singly or in fascicles. Leaves closely imbricate on branches of pinnately divided, filiform rhizomes or stems. Each leaf with 2 lobes, a green aerial lobe and a submerged, colourless lobe; aerial lobes acute or obtuse.

Azolla *Lam.* (s. Afr.: 2 spp.)

0000200

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 67-68.
Burrows. 1990. Southern African ferns and fern allies: 83.

armed all round with rigid glochidia with anchor-shaped tips. Artificial dams and reservoirs. Native to South America. *Glen 1859.*

W S C N E

filiculoides *Lam.**

Floating aquatic plant. Roots borne singly. Megaspores surmounted by 3 massulae. Massulae of microspores

BLECHNACEAE

Plants terrestrial or climbing epiphytes. Rhizome ascending trees, creeping or erect. Stipe with many vascular strands. Fronds pinnate or fertile frond bipinnate. Indusia present or absent. Sori linear, arranged parallel to costae on secondary veins.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 265 (1986).

Indusium present; fertile frond usually pinnate; rhizome erect or creeping, rarely ascending trees **Blechnum**
Indusium absent; fertile frond usually 2-pinnate; rhizome ascending trees **Stenochlaena**

Blechnum *L.* (s. Afr.: 6 spp.)

0000690

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 267-277.
Burrows. 1990. Southern African ferns and fern allies: 326.

and shelter of rock overhangs and crevices. *Kluge 1930.*

W S C N E

attenuatum (*Sw.*) *Mett. sens. lat.*

Rhizome creeping, set with dark brown rhizome scales. Sterile pinnae with bases broadest and wholly adnate to rachis. Lamina long-decrescent, basal pinnae becoming deltate and then rudimentary at extreme base. Sterile pinna apices attenuate to acute-acuminate. Rhachis usually sunken, deeply sulcate above. *Sori November to July.* Terrestrial or lithophytic in forest. *Oliver 10.*

W S C N E

capense *Burm. f.*

Rhizome creeping, set with light brown rhizome scales. Sterile pinnae with bases unequally cuneate, petiolate, margins obviously serrate. Scales at base of stipe ovate-acute. Sterile lamina up to 0,63 × 0,22 m. Fertile lamina up to 400 × 130 mm. *Sori November to June.* Streambanks in shade and amongst boulders in moist situations. *Van der Schijff 4500.*

W S C N E

australe *L. var. australe*

Rhizome creeping, set with brown rhizome scales. Sterile pinnae with bases unequally cuneate-adnate. Pinnae with apices mucronate in robust specimens, rounded and entire in high-altitude plants; margins bearing minute transparent teeth. Lamina apex acute. *Sori July to April.* Shaded streambanks, near waterfalls

inflexum (*Kunze*) *Kuhn*

Rhizome erect to procumbent, set with light brown rhizome scales. Sterile pinnae with bases broadest and wholly adnate to rachis. Basal pinnae reduced but lamina not decrescent. Sterile pinna apices obtuse to acute. Rhachis usually raised and flat or shallowly sulcate above. Streambanks. *Burrows 3264.*

W S C N E

punctulatum Sw. var. **punctulatum**

Rhizome creeping, set with brown rhizome scales. Lamina auriculate to a greater or lesser extent. Pinna apices acute to attenuate in robust specimens, dentate in high-altitude plants; margin without minute, transparent teeth. Lamina apex cuspidate. *Sori unbroken, set 1 on either side of costa on each pinna; July to May.* Sheltered rocky habitats and shaded streambanks. *Van der Schijff 5477.*

W S C N E

punctulatum Sw. var. **atherstonei** (Pappe & Rawson) Sim

Rhizome creeping, set with brown rhizome scales. Lamina auriculate to a greater or lesser extent. Pinna apices acute to attenuate in robust specimens, dentate in high-altitude plants; margin without minute, transparent teeth. Lamina apex cuspidate. *Sori on lower pinnae breaking up towards rhachis into small, separate, oval sori; January to June.* Forest, riverbanks and in shade of rocks. *Van der Schijff 4929.*

W S C N E

tabulare (Thunb.) Kuhn

Rhizome erect or procumbent, set with linear-attenuate rhizome scales up to 35 mm long. Sterile pinna with margin entire to the naked eye, unequally cuneate basally, never auriculate, seldom petiolate. Sterile lamina up to 1,4 × 0,36 m. Fertile pinnae subsessile to very shortly petiolate. *Sori January to May.* Grassland, in moist depressions and around boulder bases. *Mohle 287.*

W S C N E

Stenochlaena J. Sm. (s. Afr.: 1 sp.) 0000700

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 277–278.

tenuifolia (Desv.) T. Moore

Rhizome creeping along ground or ascending trees, up to 20 m long and 10–15 mm in diameter. Indusium absent. Fertile frond erect, usually 2-pinnate. Stipe pale brown, 0,3–0,5 m long. Sterile frond erect, pinnate. Lamina 0,8–1,5 × 0,25–0,40 m. Pinnae linear, up to 270 × 30 mm. *Sori February to March.* Riverine forests and kloofs. *Scheepers 2401.*

W S C N E

CYATHEACEAE

Tree ferns. Caudex taller than 0,5 m. Stipe smooth, spinose, muricate or tuberculate. Fronds forming a crown at top of caudex, spreading and arching, bipinnate or tripinnate. Aphlebia absent or present. Sporangia thin-walled, stalked and attached to underside of fronds on a small, raised receptacle.

Cyathea Sm. (s. Afr.: 2 spp.) 0000180

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 69–71.

capensis (L.f.) Sm.

(= *Alsophila capensis* (L.f.) Sm.,
= *Hemitelia capensis* (L.f.) Kaulf.)

Caudex slender, ± 0,1 m in diameter and up to 4,5 m high. Aphlebia (basal pinnae with filiform segments) present. Ultimate pinnule segments sharply dentate and set with pale bullate costal scales below. *Sori 1 or 2 at base of each pinnule segment; October to June.* Shaded, moist, forested ravines. *Muller 2111.*

W S C N E

dregei Kunze(= *Alsophila dregei* (Kunze) R.M. Tryon)

Caudex stout, up to 450 mm in diameter and 5 m high. Aphlebia absent. Ultimate pinnule segments entire to subentire and set with hairlike costal scales below. Pinnae pinnate into linear to very narrowly oblong, acute to attenuate, pinnate pinnules. *Sori July to June.* Streambanks in grassland and forest margins. *Muller & Scheepers 180.*

W S C N E

DAVALLIACEAE

Plants terrestrial. Rhizomes widely creeping, rarely erect, sometimes with tubers and peltate scales. Stipes and/or pinnae articulated or not. Fronds simple, pinnate, bipinnate or greatly dissected. Ultimate segments usually with an oblique base. Veins free. Sori either superficial or intramarginal, terminal on veins with indusia which usually open outwards to margin. Spores monolete.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 167 (1986).

- 1a Fronds pinnate to 2-pinnatifid; pinnae articulated to rachis; stipes not articulated; frond-bearing rhizome erect; plants often with tubers **Nephrolepis**
 1b Fronds simple, or pinnae not articulated to rachis 2
 2a Fronds simple; sori superficial on veins **Oleandra**
 2b Fronds much dissected; sori terminal on veins **Davallia**

Davallia Sm. (s. Afr.: 1 sp.) 0000490

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 171-173.

chaerophylloides (Poir.) Steud.

Rhizome creeping, up to 15 mm in diameter, set with brown, fimbriate hair-pointed rhizome scales. Frond widely spaced, much dissected. Sori solitary on lobes on vein-endings. Indusium very broadly oblong. Pinnae deltate to oblong. *Sori April to May*. Sheltered sandstone crevices and decomposing logs on forest floors. *Jacobsen 4381*.

W S C N E

Nephrolepis Schott (s. Afr.: 2 spp.) 0000500

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 167-169.

biserrata (Sw.) Schott

Frond-bearing rhizome erect. Plant up to 1 m high. Fronds pinnate to 2-pinnatifid. Stipes not articulated.

Lamina narrowly elliptic, $\pm 600 \times 240$ mm. *Sori opening towards pinna margin, ± 4 mm apart, in a line along margin; July*. Mixed bushveld and riverbanks. *Van Jaarsveld 1*.

W S C N E

Oleandra Cav. (s. Afr.: 1 sp.) 0000510

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 170-171.

distenta Kunze

Rhizome very widely creeping, set with appressed rhizome scales. Fronds simple, tufted or spaced. Sori superficial on veins, set in an irregular line. Stipe up to 45 mm long. Lamina up to 330×65 mm, apex caudate, base broadly cuneate. *Sori June to July*. Exposed rock outcrops and rocks in light shade in scrub. *Vorster 2738*.

W S C N E

DENNSTAEDTIACEAE

Large terrestrial ferns. Rhizomes creeping or erect, usually with reddish brown hairs. Fronds pubescent to hirsute or glabrous, bipinnatifid, bipinnate or tripinnatifid, pinnules sinuate or crenate. Veins reticulate or free. Sori marginal in sinuses with membranous indusia. Indusia absent or cupshaped or linear or a pseudo-indusium formed by a small reflexed lobe of lamina, opening inwards.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 79.

- 1a Veins anastomosing freely 2
 1b Veins mostly free, rarely anastomosing 3
 2a Fronds pubescent or hirsute, at least on undersurface **Blotiella**
 2b Fronds glabrous and glaucous **Histiopteris**
 3a Sori elongate, marginal or apparently marginal **Pteridium**
 3b Sori small, subcircular 4
 4a Sori opening towards margin; spores trilete **Microlepia**
 4b Sori opening inwards; spores monolete **Hypolepis**

Blotiella A.F. Tryon (s. Afr.: 2 spp.) 0000220

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 81-82.

glabra (Bory) A.F. Tryon

Rhizome creeping, set with hairs up to 6 mm long. Pinnae nearly uniformly incised from apex to base. Lamina elliptic, up to $1,3 \times 0,8$ m. *Sori mostly semicircular in small sinuses; July to June*. Moist and shaded forest floors. *Van der Schijff 5574*.

W S C N E

Histiopteris (C. Agardh) Sm.

(s. Afr.: 1 sp.) 0000230

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 82-83.

incisa (Thunb.) Sm.

Rhizome creeping, set with brown hairs. Veins anastomosing freely. Fronds glabrous and glaucous. Indusium formed from reflexed margin of lamina. Lamina 2- or 3-pinnatifid, up to $0,4 \times 0,19$ m. *Sori*

marginal, continuous, with paraphyses; January to April. Forest margins and streambanks. Kluge 1873.

W S C N E

Hypolepis Bernh. (s. Afr.: 1 sp.) 0000240
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 87–88.

sparsisora (Schrad.) Kuhn

Rhizome creeping, set with brown or reddish hairs. Veins mostly free. Fronds 2- to 5-pinnatifid. Pinnae up to 1 m long. Pseudo-indusium present. *Sori small, subcircular, opening inwards, borne singly on acroscopic margin of ultimate segments; November to May. Along streams in forests. Van Wyk 4137.*

W S C N E

Microlepis Presl (s. Afr.: 1 sp.) 0000250
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 85–86.

speluncae (L.) T. Moore

Rhizome creeping, set with brown hairs. Veins mostly free. Lamina pinnate to 4-pinnatifid, up to 600 × 210 mm. *Sori small, subcircular, opening towards margin, intramarginal, borne on a vein-ending; August to November. Shaded streambanks in evergreen forests. Meeuse 2424.*

W S C N E

Pteridium Gled. ex Scop. (s. Afr.: 1 sp.) 0000260
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 83–85.

aquilinum (L.) Kuhn subsp. **aquilinum**

Rhizome creeping, set with brown hairs. Veins mostly free. Fronds up to 1,5 m tall. Lamina 3- or 4-pinnate. Pinnae up to 400 × 150 mm. *Sori elongate, marginal or apparently marginal, pseudo-indusium formed by reflexed margin; July to June. Grassland and forest margins. Van Jaarsveld 153.*

W S C N E

EQUISETACEAE

Terrestrial plants, usually in wet soil and semishade, sometimes halophytic. Rhizomes long, underground, creeping, producing spaced, erect, hollow, ribbed, aerial stems. Stems simple or branched, in whorls at nodes. Nodes regularly spaced, surrounded by a variously connate whorl of membranaceous sheaths (leaves) with a regular number of apical teeth. Sporangia on peltate scales in terminal strobili.

Equisetum L. (s. Afr.: 1 sp.) 0000050
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 29.

ramosissimum Desf.

Subterranean stems horizontal to erect, black, bearing roots. Aerial stems up to 2 m high, conspicuously ribbed. Leaves reduced to a many-toothed, short sheath.

Sporangiophores in compact strobili, terminal on stems, sporangia numerous; February to May. Open woodland, rock crevices, sandy soil along rivers and on gravel in shallowly waterlogged places. Van der Schijff 2465.

W S C N E

GLEICHENIACEAE

Plants terrestrial. Rhizomes widely creeping, with scales or hairy. Fronds repeatedly falsely dichotomous by abortion of successive terminal buds, giving frond a reniform-lunate outline; with or without a pair of stipule-like pinnae, flanking primary and often secondary bifurcations. Dichotomous branches of fronds often relatively bare or pinnately leafy. Sori small, with 3–15 large, exindusiate sporangia.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 47 (1986).

- Rhizome set with lanceolate or deeply lacinate scales resembling stellate hairs in appearance; fronds without a pair of distinct stipule-like pinnae flanking primary bifurcation of frond **Gleichenia**
- Rhizome set with multicellular hairs, but without scales; fronds with a pair of stipule-like pinnae flanking primary and often secondary bifurcations of frond **Dicranopteris**

Dicranopteris Bernh. (s. Afr.: 1 sp.) 0000140

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 48–49.

linearis (Burm. f.) J.K. Underw.

Rhizome creeping, set with multicellular hairs. Fronds with a pair of stipule-like pinnae flanking primary and often secondary bifurcations of frond. Pinnules linear, sessile, up to 30 × 5 mm. *Sporangia single or in groups of 2–15 on veins; July to April.* Evergreen woodland, forest margins, grassland and streambanks. *Kluge 1146.*

W S C N E

Gleichenia Sm. (s. Afr.: 2 spp.) 0000150

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 47–48.

polypodioides (L.) Sm.

Rhizome set with long-spined, dark brown scales. Branches of ultimate dichotomy bipinnate. Foliar segments (pinnules) divided to midrib into rounded deltate lobes. *Sori sunken into lamina; July to June.* Sheltered, often shaded, rock crevices and slopes. *Stalmans 468.*

W S C N E

umbraculifera (Kunze) T. Moore

Rhizome creeping, set with appressed, lanceolate subentire, light brown rhizome scales. Branches of ultimate false dichotomy pinnate. Pinnules linear, entire. *Sori superficial, consisting of groups of 3 or 4 sporangia; August to May.* Grassland, boulder bases and streambanks. *Venter 10697.*

W S C N E

HYMENOPHYLLACEAE

Plants mat-forming as low-level epiphytes on trees, as lithophytes on cliffs and rocks, terrestrial much rarer on earthbanks. Rhizomes slender, mostly creeping. Fronds delicate, semitransparent, simple, flabellate or pinnatifid to quadripinnatifid. Sporangia in capsules. Indusia tubular to obconic with receptacle often protruding beyond sorus or bivalved with receptacle shorter than valves.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 71 (1986).

Indusium tubular to obconic with 2 small lobes at apex; receptacle often elongated beyond sorus; rhizome usually thickly set with brown hairs **Trichomanes**
Indusium of 2 separate valves, sometimes with a small obconic base; receptacle shorter than valves; rhizome subglabrous **Hymenophyllum**

Hymenophyllum Sm. (s. Afr.: 6 spp.) 0000160

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 76–79.

capense Schrad.

Rhizome creeping. Fronds glabrous, ultimate segments of frond entire. Basal pinnae with fewer than 5 lobes. *Sori borne on acroscopic segments anywhere in upper half of frond; February.* Lithophytic in sheltered rock crevices. *Vorster 370.*

W S C N E

capillare Desv.

Rhizome creeping. Fronds with stellate hairs, linear-oblong. Lamina linear, up to 150 × 23 mm. Pinnae pinnatifid, divided into 7 lobes, 9 × 1.5 mm. *Sori borne at apices of lobes, 1.0–1.2 mm in diameter; September to June.* Forest and sheltered rock faces. *Kluge 1871.*

W S C N E

tunbridgense (L.) Sm.

Rhizome creeping. Fronds glabrous. Pinnae divided on both sides; bilaterally pinnatifid to 2-pinnatifid into up to 25 linear lobes. Indusial lobes dentate. *Sori usually*

borne on lowest acroscopic pinnules; October to April. Forest, streams and sheltered rock faces. *Kluge 2001.*

W S C N E

Trichomanes L. (s. Afr.: 5 spp.) 0000170Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 71–76.
Burrows. 1990. Southern African ferns and fern allies.**borbonicum** Bosch

Rhizome filiform, set with brown hairs. Fronds 2- or 3-pinnatifid. Lamina up to 100 × 35 mm. *Sori turbinate, ± twice as deep as broad, borne in upper half of frond, winged by lamina for its whole length; December to June.* On moist shaded boulder faces in forest. *Kluge 2151.*

W S C N E

inopinatum (Pic. Serm.) J.E. Burrows

Usually an epiphyte, rarely lithophytic. Rhizome hairs dark brown to blackish. Stipe glabrous to sparsely set with brown, clavate hairs. Evergreen, tropical forest. No specimens in PRE.

W S C N E

melanotrichum Schldl.

(= *T. pyxidiferum* L. var. *melanotrichum* (Schldl.) Schelpe)

Rhizome filiform, set with black hairs. Fronds 2- or 3-pinnatifid. Pinnæ dark green when fresh but lobes folded longitudinally when dry. Lamina up to 70 × 25 mm. *Sori conical, almost as deep as broad, winged by lamina for part of its length; December to April.* A lithophyte or epiphyte in forest. *Scheepers 615.*

W S C N E

reptans Sw.

Rhizome creeping, set with dark brown hairs. Fronds simple or lobed less than halfway to midrib. Margin of

young fronds with stiff brown hairs. *Sori borne at apices of fronds, turbinate, ± 3 mm deep × 1 mm in diameter, winged by lamina basally; January to May.* A lithophyte or low-level epiphyte. *Venter 10666.*

W S C N E

rigidum Sw.

Rhizome stout, set with dark brown hairs. Fronds 3- or 4-pinnatifid. Lamina narrowly ovate or lanceolate to oblong-lanceolate. *Sori borne near costae of pinnæ.* Shaded streambanks in forests. *Kluge 1877.*

W S C N E

ISOETACEAE

Plants herbaceous, occurring in submerged, aquatic or permanently or seasonally wet, terrestrial habitats. Stem 2–4-lobed, flattened and cormlike with numerous black rootlets, occasionally with persistent dark scales. Leaves produced annually, tufted, grasslike, terete to slightly flattened, with a spatulate, ligulate base. Sporangia borne singly at leaf base below ligule, incompletely or completely protected on adaxial side by a membranous outgrowth, emerging from below ligule, the velum.

Isoetes L. (s. Afr.: 8 spp.)

0000040

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 23.

transvaalensis Jermy & Schelpe

Megaspores almost smooth. Rhizomorph 3-lobed, less than 10 mm in diameter. Sporangium with a complete velum. In rock pools in sandstone, submerged during summer, dry during winter. *Vorster 2223.*

W S C N E

welwitschii A. Braun ex Kuhn

(= *I. natalensis* Baker)

Megaspores with prominent discrete rounded tubercles on distal face. Rhizomorph 3-lobed, less than 15 mm in diameter. Velum lacking. Submerged in semipermanent deep vleis. *Burrows 3334.*

W S C N E

LOMARIOPSIDACEAE

Plants terrestrial, lithophytic or epiphytic with fronds simple, veins free, parallel or plants semi-aquatic with fronds pinnate and veins reticulate. Rhizomes widely or shortly creeping or climbing, with copious scales. Underside of fertile fronds entirely covered by exindusiate sporangia with stalks of medium length.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 230.

Veins free **Elaphoglossum**
Veins anastomosing **Bolbitis**

Bolbitis Schott (s. Afr.: 1 sp.)

0000570

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 239–240.

heudelotii (Bory ex Fée) Alston

Rhizome creeping, set with very dark entire rhizome scales. Veins anastomosing. Sterile lamina ovate-oblong, up to 270 × 170 mm, pinnate or pinnatifid with pinnæ oblong-lanceolate, up to 75 × 12 mm. Fertile lamina with pinnæ lanceolate-acuminate, up to 100 × 14 mm. On wet or partially submerged rocks in streambeds and forest. *Wager sub PRE 7437.*

W S C N E

Elaphoglossum Schott ex J. Sm.

(s. Afr.: 8 spp.)

0000580

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 230–239.

acrostichoides (Hook. & Grev.) Schelpe

Rhizome ± 3 mm in diameter, set with subentire rhizome scales up to 6 × 1,2 mm. Sterile lamina set with scales shorter than 1,5 mm only, very narrowly elliptic-acuminate, thinly coriaceous. Midrib conspicuously sulcate above when fresh. *Sori December to April.* Epiphyte or lithophyte in forest. *Stalmans 1003.*

W S C N E

aubertii (Desv.) T. Moore

Rhizome short, $\pm$ 3–8 mm in diameter, set with brown rhizome scales. Sterile lamina linear, acuminate, base rounded cuneate, lanceolate scales with fimbriate bases present. Scales longer than 1,5 mm. *Sori February to August*. Epiphyte in moist forest or on moss-covered boulders. *Kluge 1680*.

W S C N E

hybridum (Bory) Brack

Rhizome up to 4 mm in diameter, set with dark brown rhizome scales. Sterile lamina set with scales longer than 1,5 mm, only stellate scales present, narrowly oblong to very narrowly elliptic, acute, base shortly

decurrent. *Sori June*. Epiphyte in forest or growing on moss-covered boulders. *Jacobsen 4459*.

W S C N E

macropodium (Fée) T. Moore

Rhizome $\pm$ 5 mm in diameter, set with pale brown rhizome scales. Sterile lamina set with scales shorter than 1,5 mm, scales stellate, broadly elliptic to elliptic-oblong, thickly coriaceous, apex acute. Fronds closely spaced, young fronds not viscid. *Sori December to February*. Epiphyte in sheltered forest habitats and in rock crevices. *Burrows 3138*.

W S C N E

LYCOPODIACEAE

Erect, prostrate or pendulous plants, lithophytic, epiphytic or terrestrial. Stems unbranched or dichotomously branched, closely beset with small leaves without ligules. Leaves often decurrent, either spirally arranged or more rarely in 2 planes. Sporangia solitary in axils of ordinary leaves or usually arranged in terminal strobili. Strobili with subtending leaves different in shape and size (called sporophylls).

Lycopodium L. (s. Afr.: 9 spp.) 0000020

Schelpé & Anthony. 1986. F.S.A. Pteridophyta: 5.

carolinianum L. var. **grandifolium** Spring

Sporophylls different from foliage leaves, grouped into pedunculate strobili. Horizontal stem leafy, only producing pedunculate strobili at intervals. Lateral leaves larger and more fleshy than dorsal leaves. *Sporangia December to May and in August*. Marshy soil. *Kluge 822*.

W S C N E

cernuum L.

Sporophylls different from foliage leaves, not grouped into pedunculate strobili, shorter than 4 mm, lacerate. Fertile region shorter than 15 mm. Moist streambanks and ditches. *Scheepers 743*.

W S C N E

clavatum L.

Sporophylls different from foliage leaves, grouped into pedunculate strobili. Horizontal stem producing much-branched, erect stems at intervals. Leaves hair-pointed. Erect stems not laterally compressed. *Sporangia December to June*. Forest margins, sheltered mountain slopes amongst rocks. *Theron 3516*.

W S C N E

dacrydioides Baker

Epiphyte. Sporophylls different from foliage leaves, not grouped into pedunculate strobili, 6, 5–7 mm long.

Stems pendulous, dichotomously branched. *Sporangia July to November*. Moist forest in shade. *Vorster 250*.

W S C N E

gnidioides L.f.

Epiphyte or lithophyte. Sporophylls different from foliage leaves, not grouped into pedunculate strobili, shorter than 4 mm, 2, 5–3 mm long. Leaves coriaceous, closely imbricate. Fertile region longer than 20 mm. *Sporangia June to July and in December*. Shady montane forest or ravines. *Van Wyk & Theron 4832*.

W S C N E

ophioglossoides Lam.

Epiphyte or lithophyte. Sporophylls different from foliage leaves, not grouped into pedunculate strobili, shorter than 4 mm, $\pm$ 2 mm long. Leaves thin, very loosely imbricate. Fertile region longer than 20 mm. *Sporangia January to July*. Forest. *Van der Schijff 5454*.

W S C N E

verticillatum L.f.

Epiphyte or lithophyte. Sporophylls of same size and shape as foliage leaves. Leaves acicular, $\pm$ 0,2 mm broad. Spore-bearing stems pendent, dichotomously branched. *Sporangia January to December*. Montane forest. *Kluge 1333*.

W S C N E

MARATTIACEAE

Plants terrestrial. Rhizomes massive almost globose, bearing fleshy, mycorrhizal roots with multicellular hairs. Fronds tufted, with long stipes, with circinnate veneration (fiddlehead-like inrolling of young fronds); stipes with thick, fleshy stipules at base. Lamina bipinnate. Sori fused into synangia which split open lengthwise on reaching maturity to expose ventral face of sporangia.

Marattia Sw. (s. Afr.: 1 sp.) 0000070

Schelte & Anthony. 1986. F.S.A. Pteridophyta: 37–38.

fraxinea Sm. ex J.F. Gmel. var. **salicifolia** (Schrad.) C. Chr.

(= *M. natalensis* Presl,

= *M. dregeana* Presl)

Rhizome erect, covered with fleshy persistent stipular outgrowths. Lamina ovate, 2 × 1 m, 2-pinnate with an

alate pinna rhachis. Stipe up to 1,5 m long. *Sporangia submarginal, dense in number; July to May*. Stream-banks. Kluge 227.

W S C N E

MARSILEACEAE

Small, helophytic plants, rooting in mud, terrestrial or submerged. Rhizomes long-creeping, dichotomously branched, of indefinite growth, bearing at variously spaced internodes 1 or a number of roots and simple, filiform leaves or 2–4 opposite, obovate or obcuneate leaflets at apex of a long petiole. Sporangia produced in thick, hard, variously shaped, closed sporocarps on short or long stalks, inserted at base of petioles. Walls of sporocarps representing infolded pinnae with sporangia on undersurface.

Marsilea L. (s. Afr.: 16 spp.) 0000190

Schelte & Anthony. 1986. F.S.A. Pteridophyta: 57–65.

aegyptiaca Willd.

Stipes slender, greenish, hairy, becoming glabrous with age. Sporocarps borne on unbranched pedicels, brownish, conspicuously saddle-shaped. Pinnae variable, with longitudinal brown suberous streaks on lower surface in floating pinnae. *Sori June*. Edge of pans. Van Wyk 870.

W S C N E

apposita Launert

Stipes obtusely angular, striate, green, scattered, pilose or glabrous. Raphe covering almost entire base of sporocarp. Pinnae obdeltate, flanks shallowly concave or straight, outer margin rounded, irregularly crenate or crenate-dentate. *Sori June to July*. Rivers and pans. Wager 169.

W S C N E

capensis A. Braun

Stipes slender, usually crowded, ± 70–200 mm long. Raphe distinct, covering four-fifths to entire sporocarp base. *Sporocarps elliptic in dorsiventral cross-section, dark brown to almost black at maturity; April to August*. Pans. Van der Schijff 2920.

W S C N E

coromandelina Willd.

Stipes slender, usually glabrous, ± 10–90 mm long. *Sporocarps borne on unbranched pedicels, subspherical*

to oblong, bordered, lateral ribs distinct; teeth subequal; always densely brownish tomentose; January. An aquatic in vleis. Bremekamp & Schweickardt 193.

W S C N E

ephippiocarpa Alston

Stipes bright green, ± 30–150 mm long. *Sporocarps borne in a cluster on a much-branched pedicel, saddle-shaped, superior tooth conspicuous, short; July to May*. Vleis and edges of dams. Gilliland 740.

W S C N E

farinosa Launert sens. lat.

Stipes slender, usually hispid, ± 20–150 mm long. Pinnae at least basally densely villous. *Sporocarps borne on mbranched pedicels, brownish, oblong, sparsely pubescent with hairs of 2 kinds*. Vleis or pans. Bottomley sub CH 4777.

W S C N E

macrocarpa Presl

Stipes variable, usually glabrous. Raphe covering half to one-third of sporocarp. Pinnae green with long, brown, suberous, interstitial streaks on undersurface of floating pinnae. *Sporocarps July to May*. Dams and ponds. Hanekom 2007C.

W S C N E

nubica A. Braun var. **gymnocarpa** (Lepr. ex A. Braun) Launert

Stipe slender, glabrous, 20–180 mm long. *Sporocarps borne on unbranched pedicels. Sporocarp pedicels always*

free. Mature sporocarps black, glistening; epidermis becoming detached; February. Vleis and pools. *Germishuizen 24*.

W S C N E

villifolia Bremek. & Oberm. ex Alston & Schelpe

Stipes very robust, up to 2.5 mm in diameter near base, striate, 70–200 mm long. Sporocarps globose, densely

covered in reddish tomentum with hairs of one kind. Pinnae broadly obdeltate, olive or yellowish green, thickly herbaceous. *Sporocarps February*. Marshy soil. *Galpin M74*.

W S C N E

OPHIOGLOSSACEAE

Terrestrial or epiphytic plants. Rhizome globose, subglobose or elongate. Leaves few or solitary, simple or divided, with a sterile, foliaceous segment and a fertile, nonfoliaceous, petiolate, simple or compound, spikelike fertile segment, both arising from the same stipe. Sporangium thick-walled, without an annulus, dehiscing by a slit into 2 valves.

Ophioglossum L. (s. Afr.: 9 spp.) 0000060

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 31–35.

Burrows. 1990. Southern African ferns and fern allies: 39–48.

convexum J.E. Burrows

Rhizome elongate, with or without a few persistent petiole bases. Plants bearing a single leaf. Upper lamina surface convex with margins revolute, down-turned. Fertile spike 30–100 mm long. *Sporangia January*. Montane grassland. *Burrows 3683*.

W S C N E

costatum R. Br.

Rhizome orbicular, up to 10 mm wide, bearing a mass of wiry roots. Leaves 1–4, commonly 2. Petiole 10–55 mm long. Lamina narrowly to broadly elliptic, with an apparent midrib. Fertile spike 50–250 mm long. *Sporangia April*. Grassland, swampy areas. *Van Greuning 559*.

W S C N E

gomezianum Welw. ex A. Braun

Rhizome shortly cylindrical, ± 3 mm long. Old stipe bases persistent. Fertile spike inserted at base of sterile lamina, wholly above ground level. Sterile lamina shorter than 30 mm. *Sporangia January*. Grassland, damp soil and rocky outcrops. *Werdermann & Oberdieck 2008*.

W S C N E

lancifolium Presl

Rhizome cylindrical, 1–4 mm in diameter. Old stipe bases not persistent. Base of sterile lamina cuneate;

venation apparent to obscure. Sterile lamina narrower than 12 mm. *Sporangia February to March*. Grassland in seasonally moist soil. *Huntley 2013*.

W S C N E

polyphyllum A. Braun ex Seub.

Rhizome cylindrical, tapering from ± 3 mm in diameter, up to 40 mm long. Old stipe bases persistent. Fertile spike inserted at base of sterile lamina, wholly above ground level. Sterile lamina longer than 30 mm. *Sporangia November to April*. Grassland, moist soil in pans and rocky outcrops. *Van der Meulen 434*.

W S C N E

reticulatum L.

Rhizome cylindrical, ± 3.5 mm in diameter and 7 mm long. Old stipe bases not persistent. Base of sterile lamina cordate; venation clearly apparent. Lamina $\pm 60 \times 55$ mm. Fertile spike up to 180 mm long, with 45 pairs of sporangia. *Sporangia December to March*. Seasonally wet soils. *Van der Schijff 4515*.

W S C N E

vulgatum L.

Rhizome cylindrical, 3–4 mm in diameter. Old stipe bases not persistent. Base of sterile lamina cuneate; venation apparent to obscure. Sterile lamina broader than 12 mm. *Sporangia January*. In moist grassland, particularly after fire. *Bremekamp & Schweickerdt 333*.

W S C N E

OSMUNDACEAE

Plants terrestrial. Rhizomes massive, erect to procumbent, with persistent leaf bases. Fronds bipinnate to tripinnatifid, mostly woolly when young. Sporangia large, with a rudimentary annulus, borne on both sides of reduced pinnae on apical portion of frond or on undersurface of nondifferentiated pinnae.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 43 (1986).

Fertile pinnules much narrower than sterile pinnules **Osmunda**
 Fertile pinnules not differentiated from sterile pinnules **Todea**

Osmunda L. (s. Afr.: 1 sp.) 0000080

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 43–45.

regalis L.

Rhizome erect, without scales, covered by a mass of persistent winged leaf bases. Fertile pinnules much narrower than sterile pinnules. Lamina 2-pinnate, up to 1 m long. Veins free. *Sporangia borne in dense clusters on both surfaces of narrow fertile pinnules; July to June.* Open streambanks. *Stalmans 51.*

W S C N E

Todea Willd. (s. Afr.: 1 sp.) 0000090

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 45.

barbara (L.) T. Moore

Rhizome erect, bearing tufted fronds at apex. Fertile pinnules not differentiated from sterile pinnules. Sporangia usually on distal third of pinnae. Lamina narrowly oblong, up to 1,1 × 0,44 m. *Sporangia July to June.* Moist streambanks. *Du Plessis 1181.*

W S C N E

POLYPODIACEAE

Plants epiphytic or lithophytic, rarely terrestrial. Rhizomes creeping or climbing; scales peltate, often clathrate. Fronds produced in 2 ranks on upper side of rhizome, often articulated to it, dimorphous or uniform, simple or lobed or pinnatifid, rarely pinnate. Veins anastomosing. Sori without indusia, mostly round, submarginal or superficial and terminal on veins or at junction of 2 veins, sometimes acrostichoid or confined to upper part of lamina.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 153 (1986).

- 1a Fronds set with numerous stellate hairs **Pyrrosia**
 1b Fronds without stellate hairs **2**
 2a Sori elongate, linear **Loxogramme**
 2b Sori round **3**
 3a Fronds pinnatifid, veins free **Polypodium**
 3b Fronds simple **4**
 4a Soral paraphyses peltate, conspicuous in young sori **Pleopeltis**
 4b Soral paraphyses absent **5**
 5a Only costal areoles with included veinlets; epiphyte with long, scandent rhizomes **Microgramma**
 5b All areoles with included veinlets; lithophytic or terrestrial **Microsorium**

Loxogramme (Blume) Presl (s. Afr.: 1 sp.) 0000410

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 156.

lanceolata (Sw.) Presl

Rhizome widely creeping, bearing reddish brown, hairy roots with dark grey-brown rhizome scales. Sori elongate, linear. Fronds spaced up to 50 mm apart. Stipe stramineous to purplish brown, up to 30 mm long. Lamina narrowly elliptic, up to 330 × 28 mm, entire to irregularly sinuate, midrib and veins immersed. *Sori May to July.* Epiphyte or lithophyte in montane forests. *Van Jaarsveld 6099.*

W S C N E

Microgramma Presl (s. Afr.: 1 sp.) 0000420

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 162.

lycopodioides (L.) Copel.

Climber. Rhizome long, scandent, up to 5 mm in diameter with subulate, entire rhizome scales. Sori in a line on either side of midrib ± halfway between midrib and margin, 2,0–2,5 mm in diameter. Stipe up to 15 mm long. Lamina narrowly oblong to elliptic, up to 150 × 22 mm. *Sori January to December.* Moist scrub and short forest patches. *Fourie 2108.*

W S C N E

Microsorium Link (s. Afr.: 4 spp.) 0000430

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 162–167.

scolopendrium (Burm. f.) Copel.

(= *Phymatodes scolopendria* (Burm. f.) Ching)

Rhizome widely creeping, up to 10 mm in diameter, with caducous rhizome scales. Mature lamina very deeply pinnatifid. Stipe pale yellowish green to grey (brown when dry), up to 0,4 m long. Lamina broadly

oblong, up to 150 × 30 mm. *Sori round or oval, 1 or 2 rows on either side of midrib.* Riverine forests. *Thorn-croft 99.*

W S C N E

Pleopeltis Humb., Bonpl. & Kunth ex Willd. (s. Afr.: 3 spp.) 0000450

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 159–161.

excavata (Bory ex Willd.) Sledge

Rhizome with lanceolate to narrowly ovate-acuminate, light brown to concolorous rhizome scales. Fronds simple, undersurface glabrous or with a few scales along midrib, membranous, deciduous. Stipe up to 70 mm long. Lamina lanceolate to linear, up to 330 × 27 mm. *Sori in a line on either side of midrib in upper two-thirds of lamina; November to May.* Epiphyte in forest or on sheltered mossy boulders. *Venter 12750.*

W S C N E

macrocarpa (Bory ex Willd.) Kaulf.

Rhizome widely creeping, ± 2 mm in diameter, set with lanceolate-acuminate rhizome scales. Fronds simple. Soral paraphyses peltate, conspicuous in young sori. Undersurface of frond with numerous lacerate, peltate scales. Lamina narrowly elliptic, up to 200 × 17 mm. *Sori oval, in upper half of lamina; July to June.* Epiphyte and lithophyte in forest and forest marginal scrub. *Fourie 331.*

W S C N E

schraderi (Mett.) Tardieu

Rhizome ± 2 mm in diameter, set with black rhizome scales. Fronds simple, glabrous, carnosely coriaceous,

persistent. Stipe up to 23 mm long. Lamina narrowly elliptic, acuminate, up to 330 × 23 mm. *Sori round to oval, in a line on either side of midrib in upper half of lamina; July to June.* Epiphyte or growing on mossy boulders in shade of forests and in rock crevices. *Van der Schijff 5903.*

W S C N E

Polypodium L. (s. Afr.: 2 spp.) 0000460

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 156–157.

polypodioides (L.) Hitchc. subsp. ecklonii (Kunze)

Schelpe

Rhizome ± 1.5 mm in diameter with entire brown rhizome scales. Fronds pinnatifid with scattered peltate scales on undersurface. Stipe up to 60 mm long. Lamina lanceolate-oblong, up to 150 × 55 mm. *Sori submarginal, usually in upper half of lobe, round; June to July.* Epiphytic or lithophytic in shade on boulders and in forest. *Scheepers 807.*

W S C N E

Pyrrosia Mirb. (s. Afr.: 2 spp.) 0000470

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 153–155.

schimperiana (Mett. ex Kuhn) Alston

Rhizome creeping, ± 2 mm in diameter, with entire rhizome scales. Fronds set with numerous stellate hairs, spaced up to 10 mm apart. Stipe tomentose, up to 28 mm long. Lamina linear-lanceolate, narrowly elliptic to oblanceolate, up to 280 × 14 mm. *Sori May to July.* Lithophytic on boulders or an epiphyte. *Van der Schijff 5505.*

W S C N E

PSILOACEAE

Terrestrial plants, confined to proximity of water. Aerial stems chlorophyllous, rigid, twisted, dichotomously branched from above middle; subterranean, rhizomelike stems brown. Leaves few, greatly reduced. Sporangia borne on upper parts of aerial stems, supported by a very small, bifurcate bract, in 3-lobed synangia.

Psilotum Sw. (s. Afr.: 1 sp.) 0000010

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 1.

nudum (L.) P. Beauv.

(= *Lycopodium nudum* L.,
= *P. triquetrum* Sw.)

Rhizome short, rootless, ± 1.5 mm in diameter. Aerial stems triangular in cross-section, glabrous, up to 240 ×

2 mm, with widely spaced, lanceolate scale leaves up to 1.5 mm long. *Sporangia ± 2.5 mm in diameter, each subtended by a bifurcate bract, ± 1.3 mm long; November, April to May.* Sheltered, moist rock crevices. *Van Wyk 920.*

W S C N E

SALVINIACEAE

Aquatic, floating plants. Rhizomes slender, branching, rootless. Leaves spaced along rhizome in whorls of 3; with 2 floating, oblong to orbicular, entire, with branched or unbranched papillate hairs on upper surface which by means of trapped air cause leaves to float; submerged leaf rootlike, dissected. Sori in globular, hairy sporocarps at base of floating leaves or on submerged leaf.

Salvinia *Adans.* (s. Afr.: 1 sp.) 0000210
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 67

molesta *D.S. Mitch.**
(= *S. auriculata* auctt., non Aubl.)

Rhizomes rootless, siphonostelic. Leaves dimorphous, borne in whorls of 3, with 2 leaves floating, oblong to

orbicular, entire, variously papillate on aerial surface, third leaf submerged, finely dissected, hairy and root-like. Floating aquatic in standing inland waters. Native in tropical Africa. *Pienaar 500.*

W S C N E

SCHIZAEACEAE

Plants terrestrial, chasmophytes, hemicryptophytes or lianas. Fronds erect. Sporangia borne on a reduced, fertile pinna at apex of a linear, grasslike frond, on dimorphous, branched pinnae or marginally on undifferentiated pinnae. Annulus well developed as a caplike structure at apex of sporangia, dehiscing longitudinally.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 49 (1986).

- 1a Sporangia borne on small fertile pinnae at apex of a very narrowly, linear frond **Schizaea**
- 1b Sporangia borne on a branched basal pinna or on modified pinnae **2**
- 2a Sporangia borne on a much modified branched basal pinna; rhizome set with hairs **Anemia**
- 2b Sporangia borne on unmodified pinnae; rhizome set with scales **Mohria**

Anemia *Sw.* (s. Afr.: 2 spp.) 0000100
Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 52–53.

dregeana *Kunze*

Rhizome erect, set with hairs. Fronds (excluding fertile pinnae) pinnate. Sterile pinnae sessile, ovate-oblong or lanceolate, base truncate or unequally cuneate. Fertile pinnae with petiolules up to 100 mm long. Forests and rocky streambanks. *Stalmans 479.*

W S C N E

simii *Tardieu*

Rhizome horizontal, set with light brown to reddish brown hairs up to 7 mm long. Fronds 2-pinnate. Sterile lamina ovate-deltate to deltate, up to 130 × 120 mm. Ultimate segments obtuse to rounded, decurrent, sinuately lobed, minutely crenate-dentate. Fertile pinnae erect, longer than sterile portion. *Sporangia April to June.* Shade of tall woodland and along streambanks. *Kluge 2389A.*

W S C N E

Mohria *Sw.* (s. Afr.: 4 spp.) 0000120
Burrows. 1990. Southern African ferns and fern allies: 63–64.
Roux. 1990. S. Afr. J. Bot. 56,2: 268–270.

caffrorum (*L.*) *Desv.* var. **caffrorum**

Rhizome shortly creeping with rhizome scales 2–7 mm long, pale brown, narrowly lanceolate. Stipe and rachis thinly to moderately densely set with pale brown scales below. *Sporangia October to July.* Grassland, moist earth banks, rocky hillsides, along forest margins. *Venter 1094.*

W S C N E

caffrorum (*L.*) *Desv.* var. **ferruginea** *J.E. & S.M. Burrows*

Rhizome shortly creeping, with rhizome scales 2–7 mm long, pale brown, narrowly lanceolate. Stipe and rachis densely set with dark reddish brown scales. Pinnules subglabrous below. *Sporangia October to March.* Montane grassland. *Burrows 3677.*

W S C N E

rigida *J.P. Roux*

Terrestrial or lithophytic fern. Rhizome prostrate with sessile, castaneous narrow-lanceolate scales. Rachis rigid. Lamina elliptic to narrow-elliptic, 43–197 mm long, bipinnate with 7–21 pinnae pairs. Spores trilete with broad, weak ridges and shallow grooves. *Sporangia September to May.* Grassland, moist areas, rocky places. *Van der Schijff 5129.*

W S C N E

Schizaea Sm. (s. Afr.: 2 spp.) 0000130

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 49–51.

pectinata (L.) Sw.

Rhizome horizontal, subterranean, set with multicellular hairs. Rhachis between fertile pinnae recurved through a semicircle at maturity with longest fertile pinnae $\pm$ middle and with shorter pinnae at base and apex. *Sporangia July to June*. Montane grassland and amongst rocks. *Venter 7775*.

W S C N E

tenella Kaulf.

Rhizome creeping, densely set with multicellular hairs. Rhachis between fertile pinnae ascending with fertile pinnae progressively shorter towards apex. Fronds filiform, up to $230 \times \pm 0,5$ mm. *Sporangia July to April*. Streambanks, crevices and dripping rock faces. *Hemm 515*.

W S C N E

SELAGINELLACEAE

Terrestrial, mosslike plants. Sporophyte with erect or prostrate or climbing stems bearing aerial roots. Leaves small, on all branch systems uniform or similar or secondary branch systems markedly dimorphous; seta present or absent. Sporangia borne in axils of special leaves, sporophylls, which, like leaves, may be uniform or dimorphous; always concentrated in strobili.

Selaginella P. Beauv. (s. Afr.: 8 spp.) 0000030

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 15.

caffrorum (Milde) Hieron.

A perennial, creeping plant. Leaves of all branches $\pm$ similar, crowded, subulate, aristate, green. Seta on leaf apex one-quarter or less the length of blade. Sporophylls in 4 ranks. *Sporangia October to January*. Rock surfaces, rock crevices and bases of boulders. *Van der Schijff 7333*.

W S C N E

dregei (Presl) Hieron.

A creeping, perennial plant. Leaves of all branch systems $\pm$ similar, crowded, subulate, aristate, greyish green. Seta on leaf apex one-third or more the length of blade, white and opaque. Sporophylls in 2 ranks. *Sporangia March to May and in November*. Growing in open and under scrub in rocky situations. *Onderstall 1189*.

W S C N E

grisea Alston

Mosslike plant. Plants robust with erect branches from a prostrate stem. Leaves oblong-lanceolate, $\pm$ 2 mm

long, brownish grey. Setae at leaf apices half to equaling the length of blade. Sporophyll margins strongly and closely ciliate. Mixed, dry, deciduous woodland. No specimens in PRE.

W S C N E

kraussiana (Kunze) A. Braun ex Kuhn

Plant wide-creeping. Leaves of at least secondary branch systems markedly dimorphic. Lateral leaves $3-4 \times 0,75-1,50$ mm; hyaline teeth of equal lengths around margins of median leaves. *Sporangia December to March*. On forest floors in deep shade. *Zambatis 850*.

W S C N E

mittenii Baker

Plant creeping. Leaves of at least secondary branch systems markedly dimorphic. Lateral leaves 2 mm or less in length, curling beneath stem when dry; hyaline teeth becoming longer cilia at base of median leaves. *Sporangia September, January*. In grassland around bases of boulders. *Venter 1096*.

W S C N E

THELYPTERIDACEAE

Terrestrial plants. Rhizome subterranean, creeping or erect. Fronds closely or widely spaced; lamina pinnate or bipinnatifid, glabrous or hairy. Veins free on lobes or 2 from adjacent lobes sometimes meeting in sinus between lobes, or 2 veins of adjacent lobes or more sometimes uniting to form an excurrent vein which runs to sinus between pinna lobes. Sori borne dorsally on veins, round, with reniform indusia or elongate without indusia.

Key after Schelpe & Anthony in F.S.A. Pteridophyta: 207 (1968).

Fronds not proliferous or only proliferous near apex; soral paraphyses absent **Thelypteris**
 Fronds proliferous anywhere on rachis; soral paraphyses present **Ampelopteris**

Ampelopteris Kunze (s. Afr.: 1 sp.) 0000535

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 220–221.

prolifera (Retz.) Copel.

(= *Thelypteris prolifera* (Retz.) P.J. Vorster)

Rhizome creeping, set with black rhizome scales. Fronds simply pinnate to 2-pinnatifid, proliferous anywhere on rachis, tufted. Soral paraphyses present. Lamina very narrowly deltate, up to $1 \times 0,26$ m. *Sori* circular to elongate, exindusiate; November to May. Riverbanks and marshy areas. Kluge 2274.

W S C N E

Thelypteris Schmidel (s. Afr.: 10 spp.) 0000532

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 207–219.

bergiana (Schtdl.) Ching

(= *Amauropelta bergiana* (Schtdl.) Holttum,
= *Polypodium bergiana* Schtdl.)

Rhizome erect, set with pale brown rhizome scales up to 8 mm long. Fronds tufted. Lamina narrowly elliptic, up to $0,95 \times 0,25$ m, deeply 2-pinnatifid, surface pilose with short, hooked whitish hairs; veins quite free. *Sori* medial to submarginal, up to 14 per lobe; August to May. Streambanks in forest and moist localities along forest margins. Van Wyk 4152.

W S C N E

chaseana Schelpe

Rhizome creeping, set with pilose rhizome scales up to 11 mm long. Fronds spaced up to 10 mm apart. Lamina, especially costae, thickly pilose, hairs on costae and costules uniform, mostly 0,5–1,0 mm long. Indusium ± 1 mm in diameter, pilose with long hairs. Forest floors and shaded or exposed streambanks. No specimens in PRE.

W S C N E

confluens (Thunb.) Morton

Rhizome widely creeping, set with dark brown rhizome scales. Lamina lanceolate, up to $0,50 \times 0,21$ m, deeply bipinnatifid. Pinnae oblong-lanceolate, deeply pinnatifid. Ovate scales borne along lower surface of costae. *Sori* circular, medial; October to May. Marshy areas and swampy streambanks. Buitendag 1128.

W S C N E

dentata (Forssk.) E. St. John

(= *Christella dentata* (Forssk.) Holttum)

Rhizome shortly creeping, set with dark brown rhizome scales. Fronds up to 1,5 m long. Pinnae linear-lanceolate, deeply pinnatifid into oblong, obtuse lobes, lowest 2–4 pairs of pinnae gradually decrescent. *Sori* circular, medial, up to 14 per lobe; October to May. Forest floors and margins. Buitendag 1059.

W S C N E

gueinziana (Mett.) Schelpe

(= *Christella gueinziana* (Mett.) Holttum)

Rhizome erect, set with brown rhizome scales. Fronds tufted. Lamina thinly pilose, hairs on costae of different sizes, mostly 0,0–0,5 mm long. *Sori* medial, up to 16 per lobe; July to June. Shaded and exposed streambanks and forest undergrowth. Behr 697.

W S C N E

interrupta (Willd.) K. Iwats.

(= *Cyclosorus goggilodus* (Schkuhr) Link,
= *T. gongyloides* (Schkuhr) Small)

Rhizome widely creeping, set with sparse blackish rhizome scales. Basal pairs of pinnae not reduced. *Sori* on veins closer to margins than costules, circular, up to 18 per lobe. Lamina up to $0,84 \times 0,3$ m. *Sori* January to June. Riverbanks, vleis and swamps. Van der Schijff 5666.

W S C N E

madagascariensis (Fée) Schelpe

(= *Dryopteris silvatica* (Pappe & Rawson) C. Chr.,
= *Pneumatopteris unita* (Kunze) Holttum)

Rhizome erect. Fronds proliferous at apex. More or less 4 pairs of veins anastomosing below sinus between pinna lobes. *Sori* circular, up to 20 per lobe, exindusiate; July to February. Shaded streambanks and moist floors in forest. Kluge 2395.

W S C N E

oppositiformis (C. Chr.) Ching

Rhizome erect, with tufted fronds. Shiny, yellowish or reddish glands present on undersurface of lamina. Lamina narrowly elliptic in outline, 2-pinnatifid. *Sori* January. Along mountain streams in montane grassland or in light shade of fringing evergreen forest. Burrows 3709.

W S C N E

pozoi (Lag.) Morton

(= *Stegnogramma pozoi* (Lag.) K. Iwats.)

Rhizome erect, set with dark brown rhizome scales. *Sori* linear, along veins, exindusiate. Stipe thinly pubescent with minute whitish hairs. Pinnae adnate, incised $\pm$ halfway to costa into quadrate, rounded, undulate lobes ± 4 mm broad. *Sori* July to May. Moist shaded forest floors and streambanks. Kluge 2256.

W S C N E

pulchra (Bory ex Willd.) Schelpe

Rhizome erect, set with pale brown rhizome scales. Fronds decrescent with a series of much reduced pinnae at base. Pinnae very narrowly oblong, deeply pinnatifid into very narrowly oblong, acute lobes. *Sori* borne halfway between costa and margin; July. Forest and streambanks. Burrows 3109.

W S C N E

VITTARIACEAE

Plants epiphytic or lithophytic. Roots with copious dark hairs. Rhizome with brown to greyish brown, clathrate scales; creeping or erect. Fronds simple, linear or narrowly elliptic to ovate, glabrous, often pendulous. Sori elongate, mostly exindusiate, in 2 marginal or intramarginal, straight grooves, parallel to midrib, or following reticulate veins.

Vittaria Sm. (s. Afr.: 1 sp.)

0000270

Schelpe & Anthony. 1986. F.S.A. Pteridophyta: 89–90.

isoetifolia Bory

Rhizome shortly creeping, set with dark brown rhizome scales up to 10 mm long. Fronds sessile, very narrowly

linear to narrowly elliptic, suberect to pendulous, glabrous. *Sori exindusiate, in 2 marginal, submarginal or intramarginal grooves, midrib and veins obscure; October to May.* Epiphyte on old trees in moist forest habitats. *Van der Schijff 4939.*

W S C N E

GYMNOSPERMS

Key to families adapted from Dyer, Gen. 2: 759 (1976).

- 1a Palmlike plants, with stems above or below ground, covered with persistent leaf bases; sometimes up to 10 m high; with a crown of palmlike leaves ZAMIACEAE
- 1b Trees or shrubs, with hardwood stems and simple leaves along branches 2
- 2a Leaves small, scale-like; ovules 1 or 2 or more on carpels; seeds in an indehiscent, roundish fruit or in a woody, dehiscent cone CUPRESSACEAE
- 2b Leaves well-developed 3
- 3a Leaves strap-shaped, seeds 1 or 2, large and drupe-like, borne on a receptacle (often swollen and fleshy) formed from base of strobilus PODOCARPACEAE
- 3b Leaves needle-like; in groups of 2–5; seeds dry, in cones PINACEAE

CUPRESSACEAE

Evergreen trees or shrubs; monoecious or occasionally dioecious. Leaves usually of 2 types, in juvenile form often needlelike, spirally or subspirally arranged and spreading, in adult form usually small, squamiform, whorled or decussate and ± appressed. Male cones small, mostly terminal and solitary. Female cones developing into typical cone, with enlarged leathery or woody scales. Scales few to many, all or most fertile, bearing erect ovules at base on adaxial surface. Seeds free, mostly winged.

Widdringtonia Endl. (s. Afr.: 3 spp.) 0038010

Marsh. 1966. F.S.A. 1: 44–45.
Powrie. 1972. Jl S. Afr. Bot. 38: 301–304.

nodiflora (L.) Pówie
(= *W. cupressoides* (L.) Endl.)

Shrub or small tree, up to 9 m high. Valves of female cone smooth to wrinkled, not tubercled along margin,

if warty then irregularly so; adult leaves on ultimate branchlets narrowly oblong, subtriangular in transverse section. Forest, mountainous areas. *Van der Schijff* 4477.

W S C N E

PINACEAE

Trees or rarely shrubs; monoecious, evergreen or rarely deciduous, with monopodial growth; wood containing resin. Leaves linear, spirally arranged. Male cones small, with numerous spirally arranged scales each bearing 2 pollen sacs on abaxial surface; pollen grains usually with a pair of wings. Female cones usually subterminal, usually woody; scales arising in axils of numerous spirally arranged bracts and attached to them only at base, bearing 2 inverted ovules on adaxial surface. Seeds usually winged.

Pinus L. (s. Afr.: 9 spp.)

0022000

Jessop. 1966. F.S.A. 1: 51–52.
Farjon. 1984. Pines : 33–193.

patula Schldtl. & Cham.*

Slender tree, up to 20 m high. Needles thin, bright green, 180–300 mm long, grouped in bundles of 3, usually pendulous. Cones 70–100 mm long, ovoid conic, with an asymmetrical base, flattened apophyses without prickles. Native to North America. *Henderson* 635.

W S C N E

roxburghii Sarg.*

(= *P. longifolia* Roxb.)

Tree, up to 40 m high. Needles long, 200–300 mm long, bright green, near ends of branches, flexible, with long basal sheaths. Cones short-stalked, 100–150 mm long, broadly ovoid. Scales with thick, woody apophyses, strongly reflexed apex ending in a small, unarmed umbo. Grassland. Native to Europe & Asia. *Glen* 2924.

W S C N E

PODOCARPACEAE

Trees or shrubs; usually dioecious. Leaves linear to ovate or scale-like. Male cones axillary or terminal, usually consisting of numerous fertile scales each bearing 2 pollen sacs; pollen grains with air-bladders or wings. Female cones reduced, with 1 to several fertile scales; ovule solitary, erect or inverted, usually enclosed in a false aril (epimatium). Cotyledons 2. Seeds large, drupe-like.

Podocarpus *L'Hér. ex Pers.* (s. Afr.):

4 spp.)

0013000

Leistner. 1966. F.S.A. 1: 34–41.

falcatus (*Thunb.*) *R. Br. ex Mirb.* (= *Taxus falcata* Thunb.)

Tall tree, up to 25 m high. Branchlets usually less than 1,5 mm in diameter near apex. Leaf blade orientated in a vertical plane. Seeds borne on scaly or leafy branches, which do not swell, ripening to a yellowish or light reddish brown colour. Forest. *Scheepers 1240.*

W S C N E

latifolius (*Thunb.*) *R. Br. ex Mirb.*

Tree, up to 33 m high. Branchlets usually more than 1,5 mm in diameter. Leaf blade orientated in a horizontal plane, wider than 5 mm, shorter than 80 mm. Seeds borne on succulent receptacles. Forests or on exposed rocky slopes (as a low spreading tree or shrub). *McMurtry 4527.*

W S C N E

ZAMIACEAE

Plants with subterranean or aerial stems. Stem protected by persistent leaf bases, with a few to many leaves produced from apex of stems and alternating with series of ovate to lanceolate, woolly bracts. Leaves pinnate, palmlike. Cones with male and female scales (sporophylls) spirally arranged, 1 to several produced at apex of stems. Seeds with a fleshy covering.

Encephalartos *Lehm.* (s. Afr.: 32 spp.) 0005000

Dyer & Verdoorn. 1966. F.S.A 1: 5–34.

Lavranos & Goode. 1989. Durban Mus. Novit. 14,8: 153–156.

Goode. 1989. Cycads of Africa.

cupidus *R.A. Dyer*

Plants unbranched or branched from base, up to 0,75 m high, 200–300 mm in diameter. Leaves $\pm$ 1 m long. Leaflets $\pm$ glaucous green, usually with both upper and lower margins with 2–5, rarely more, forwardly directed sharp prickles $\pm$ 4–7 mm long and terminating in a single prickle or rarely with 2 or 3 subequal apical prickles. Rocky situations. *Van Heerden sub PRE 30546.*

W S C N E

dolomiticus *Lavranos & D.L. Goode*

Stems unbranched, up to 1,2 m high, 250–300 mm in diameter. Crown densely covered with soft, buff-coloured woolly bracts, 30–60 mm long. Leaves 600–800 mm long, mostly twisted and recurved, glaucous green. Petiole 90–140 mm long. Leaflets 120–160 $\times$ 12–14 mm. Dolomite rock formations, grassland. *Matthysen & Nitzsche sub PRE 32853.*

W S C N E

dyerianus *Lavranos & D.L. Goode*

Plant with robust stems, 3 or 4 from one rootstock. Stems up to 4 m high, 400–600 mm in diameter. Leaves glaucous green, tinged yellow with age, up to 1,25 m long. Median leaflets 190–210 $\times$ 10–15 mm, irregularly

toothed. Base with a very distinct, brown 'collar'. Granite hillsides. *Smit sub PRE 32864.*

W S C N E

eugene-maraisii *I. Verd.* subsp. **eugene-maraisii**

Plant unbranched or more often branched from base. Stems up to 4 m high. Leaves slightly or markedly incurved near tip, up to 1,5 m long, greyish green with a silvery bloom. Median leaflets 13–15 mm broad. Female cone scales with a slightly rugose face. Mountainous areas. *Marais sub Herb. Marloth 13368.*

W S C N E

eugene-maraisii *I. Verd.* subsp. **middelburgensis**

Lavranos & D.L. Goode

Mature plant with 3–6(–12) stems. Stems robust, erect (up to 5 m high) or procumbent (up to 9 m long). Leaves 1,1–1,8 m long, blue-grey. Median leaflets 160–230 $\times$ 11–17 mm, usually entire. Petiole 350–400 mm long. Open grassland, sheltered valleys. *Codd & Verdoorn 10111.*

W S C N E

heenanii *R.A. Dyer*

Mature plants with 1–5 stems, often fire-blackened. Stems 2,5 m high, 250–350 mm in diameter. Dead rhachises forming a long-lasting 'skirt' in absence of fire. Leaves dark green, 1,0–1,3 m. Median leaflets 120–150 $\times$ 15 mm, usually with entire, toothless margins, veins on undersurface prominently raised. Petiole

250–290 mm long, covered with brown hairs. Montane grassland, steep rocky areas. *Venter 9267*.

W S C N E

humilis *I. Verd.*

Dwarf plant, branching freely from parent rootstock. Stems up to 300 mm tall. Cones with a dense woolly covering, single. Leaves up to 500 mm long, bluish green, untidy looking. Median leaflets 90–130 × 4–6 mm, finely ± 9-nerved on undersurface. Grassy slopes, between dolomite rocks. *Dyer, Verdoorn & Codd 5776*.

W S C N E

inopinus *R.A. Dyer*

Plant freely branched from base. Stems up to 3 m long. Leaves up to 1,5 m long, bluish green. Leaflets towards base of petiole deflexed in relation to rhachis, basal leaflets reduced to a short or long series of prickles, median leaflets 140–210 × 8–13 mm, 13–21-veined on undersurface. Cliffs in hot valleys. *Dyer, Codd & Verdoorn 5788*.

W S C N E

laevifolius *Stapf & Burtt Davy*

Plants unbranched or branched. Stems up to 3 m tall. Cones with a short, greyish tomentum, not conspicuously woolly. Leaves straight, up to 1 m long. Median leaflets up to ± 120 × 5–7 mm, 10–12-nerved on undersurface. Mountainsides. *Mogg sub PRE 29435*.

W S C N E

lanatus *Stapf & Burtt Davy*

Plants usually unbranched. Stems up to 1 m high. Cones with a dense, woolly covering, 1–4 together. Leaves particularly recurved at tip, up to 1 m long. Median

leaflets 100–130 × 6–8 mm, finely 10–14-nerved on undersurface, flat. Sheltered rocky ledges. *Codd & Verdoorn 10106*.

W S C N E

lebomboensis *I. Verd.*

Plant single-stemmed or clumps of up to 6–8 stems. Stems up to 4 m high, 300 mm in diameter. Leaves straight or recurved towards tip, up to 2 m long. Median leaflet 120–170 × 12–22 mm, usually with 1–4 teeth on both margins. Steep grassy slopes, kloofs, open grassland, thick bush. No specimens for the area in PRE.

W S C N E

paucidentatus *Stapf & Burtt Davy*

Plant usually unbranched. Stems up to 6 m high. Leaves dark green, up to 2 m long. Leaflets with ± 20 regular, conspicuously raised longitudinal veins on lower surface. Median leaflets linear-lanceolate, straight or somewhat falcate, 150–250 × 20–30 mm, with or without 1–3 prickles. Forest, mountain bush. *Thornicroft sub PRE 29815 & 29815A*.

W S C N E

transvenosus *Stapf & Burtt Davy*

Plant generally unbranched. Stems up to 13 m high. Leaves up to 2,5 m long, glossy, dark olive-green above, matt yellowish green below, with contrasting yellow rhachises. Leaflets spreading-recurved from rhachis, lanceolate to ovate-lanceolate, sometimes falcate, 100–200 × 20–35 mm, toothed with a pungent apex. Mountain slopes. *Key 1*.

W S C N E

MONOCOTYLEDONS

Key to groups after Dyer, Gen. 2: 759–763 (1976).

- 1a Gynoecium composed of 2 or more free carpels with separate styles and stigmas **Group 1**
- 1b Gynoecium composed of 1 carpel or of 2 or more united carpels with free or united styles 2
- 2a Ovary superior 3
- 2b Ovary $\pm$ inferior; perianth present 6
- 3a Perianth present, composed of 4 or more free or united segments, not reduced to bristles 4
- 3b Perianth absent or reduced to bristles or to 1–3 scales 5
- 4a Perianth composed of separate calyx and corolla, calyx often herbaceous, corolla usually petaloid or otherwise different from calyx, sepals and petals either free or united among themselves but never into a single perianth tube **Group 2**
- 4b Perianth composed of similar or subsimilar segments in 2 series, usually petaloid but sometimes herbaceous or dry and glumaceous, either free or united into a single perianth tube **Group 3**
- 5a Flowers unisexual, not arranged in small spikes with scale-like bracts **Group 4**
- 5b Flowers (florets) bisexual or unisexual, arranged in small spikes (spikelets) with scale-like bracts (glumes or lemmas), spikelets sometimes 1-flowered; grasses and sedges **Group 5**
- 6a Perianth composed of separate calyx and corolla, calyx herbaceous or otherwise different from petaloid corolla, sepals and petals either free or united among themselves but never united into a single perianth tube **Group 6**
- 6b Perianth composed of similar or subsimilar segments, usually 6 in 2 series, sometimes 3 in 1 series, usually petaloid, either free or united into a single perianth tube **Group 7**

Group 1

- 1a Leaves pinnate; palms **ARECACEAE**
- 1b Leaves simple; aquatic or marsh herbs 2
- 2a Perianth absent or cupular; stamens 1 or 2; fresh water plant, submerged, with narrow leaves **ZANNICHELLIACEAE**
- 2b Perianth present, composed of 1–6 free segments; stamens 3 or more; fresh-water or marsh plants 3
- 3a Flowers with bracts in whorls or in simple or compound umbels, sometimes spicate; perianth composed of 3 sepals and 3 petals, or petals sometimes absent; plants aquatic or terrestrial **ALISMATACEAE**
- 3b Flowers without bracts, in spikes; perianth composed of 1–4 similar segments; plants aquatic 4
- 4a Leaves radical; spikes simple or 2-branched on elongated peduncles, at first enclosed in a spathe; perianth segments 1–3; stamens usually 6, with elongated filaments; ovules 2 or more in each carpel **APONOGETONACEAE**
- 4b Leaves borne on elongated stems; spikes simple on axillary peduncles, without a spathe; perianth segments usually 4; stamens usually 4, anthers sessile; ovules 1 in each carpel **POTAMOGETONACEAE**

Group 2

- 1a Leaves pinnate or flabellate; palms **ARECACEAE**
- 1b Leaves simple, not flabellate; herbs 2
- 2a Ovary 1-locular with parietal placentas bearing numerous ovules; leaves mostly radical; flowers in spikes on elongated peduncles; petals united below into a tube; anthers opening by longitudinal slits; style 3-branched **XYRIDACEAE**
- 2b Ovary 2- or 3-locular with axile or apical placentas bearing 1 or more ovules 3
- 3a Flowers unisexual, small and actinomorphic, in bracteate heads on elongated peduncles; corolla inconspicuous, not brightly coloured, often minute in male flowers; style branched; leaves narrow, radical or crowded **ERIOCAULACEAE**
- 3b Flowers bisexual or polygamous, actinomorphic or zygomorphic, in open or congested cymes or panicles or fascicles, often subtended by folded or boat-shaped bracts; corolla conspicuous, usually brightly coloured, often blue or yellow; style unbranched **COMMELINACEAE**

Group 3

- 1a Perianth segments dry and glumaceous or the inner hyaline; leaves narrow or reduced to sheaths; rush-like herbs 2
- 1b Perianth segments petaloid or herbaceous 3
- 2a Plants dioecious; ovary 2-locular with 1 apical, pendulous ovule in each locule; styles 1–3 **RESTIONACEAE**
- 2b Plants with bisexual flowers; ovary 1- or 3-locular with 3 or more ovules in each locule; style 1, 3-branched **JUNCACEAE**
- 3a Aquatic herbs; flowers in spikes or racemes 4
- 3b Plants terrestrial 5
- 4a Perianth segments 6, petaloid, united below into a tube; ovary 1–3-locular with numerous ovules in each locule; fruit a capsule; leaves with an expanded ovate lamina, or linear and submerged **PONTEDERIAACEAE**
- 4b Perianth segments 4, herbaceous, free; ovary 1-locular with 1 ovule; fruit a small drupe; leaves narrowly linear or filiform, submerged **POTAMOGETONACEAE**
- 5a Inflorescence a spadix enclosed in a spathe; flowers unisexual, very small, female at bottom of spadix, male above; ovary 1- or 2-locular; leaves (or solitary leaf) radical, 1–4-pinnate or with a sagittate or hastate lamina; herbs **ARACEAE**
- 5b Inflorescence not a spadix enclosed in a spathe; flowers bisexual or sometimes unisexual; ovary 3-locular 6

- 6a Leaves reduced to scales or spines, their function often fulfilled by leaf-like acicular or flattened branches (cladodes); herbs or shrublets, often climbing **LILIACEAE**
- 6b Leaves (or solitary leaf) well developed, sometimes appearing after flowers 7
- 7a Flowers unisexual, small, in axillary umbels; leaves with reticulate venation and stipular tendrils; fruit a berry; climbing shrubs, often with prickly stems **LILIACEAE**
- 7b Flowers bisexual; leaves without stipular tendrils 8
- 8a Flowers in umbels subtended by 1 or more spatheaceous bracts and borne on naked peduncles; herbs with radical leaves; fruit a loculicidal capsule **AMARYLLIDACEAE**
- 8b Flowers solitary or in racemes or spikes or panicles 9
- 9a Perianth segments united below in a tube 10
- 9b Perianth segments free 11
- 10a Anthers opening by an apical pore; filaments short, inserted at mouth of perianth tube; herbs **TECOPHILAEACEAE**
- 10b Anthers opening by longitudinal slits; herbs or shrubs or trees, sometimes succulent or climbing **LILIACEAE**
- 11a Ovary with 1 ovule in each locule; fruit a drupe; perianth subpetaloid; herbaceous climbers, leaves ending in tendrils; flowers small, in panicles **FLAGELLARIACEAE**
- 11b Ovary with 2 or more ovules in each locule; fruit a capsule or berry; perianth petaloid; herbs, sometimes climbing, leaves ending in tendrils **LILIACEAE**

Group 4

- 1a Leaves absent; minute aquatic herbs, plant body reduced to a thallus-like 'frond' with or without 1 or more pendent rootlets **LEMNACEAE**
- 1b Leaves (or solitary leaf) present, well developed 2
- 2a Submerged aquatic herbs with elongated stems and narrow, linear leaves; leaves opposite or verticillate; flowers solitary or few together in axils of leaves; freshwater plants **NAJADACEAE**
- 2b Plants terrestrial or aquatic but not submerged 3
- 3a Floating aquatic herbs, stemless with a rosette of sessile leaves **ARACEAE**
- 3b Plants not floating; herbs or woody climbers 4
- 4a Leaves narrow, linear; inflorescence a dense cylindrical spike, female below, male above; ovary 1-locular with 1 apical pendulous ovule; swamp herbs, often growing in water at base **TYPHACEAE**
- 4b Leaves (or solitary leaf) broad, often deeply divided; inflorescence a spadix subtended by or enclosed in a spathe, female below, male above and sometimes with a terminal sterile appendix; ovary 1-4-locular with 1 or more ovules on basal or axile or parietal placentas; terrestrial herbs or climbers **ARACEAE**

Group 5

- Florets each enclosed by a bract (lemma) on outside and a bracteole (palea) on inside, spikelet usually with 2 empty bracts (glumes) at its base; perianth absent or represented by 2 or 3 minute scales (lodicules); stems usually with hollow internodes, terete or compressed; leaf sheaths usually open; seed usually adnate to pericarp of fruit; grasses, sometimes shrubby or arborescent (bamboos) **POACEAE**
- Florets each enclosed by a single bract (glume) on outside, without a bracteole or female florets, sometimes each surrounded by a closed bracteole (utricle); perianth absent or represented by bristles or scales; stems usually solid, often triquetrous; leaf sheaths usually closed; seed free from pericarp of fruit; sedges **CYPERACEAE**

Group 6

- 1a Aquatic herbs; flowers actinomorphic, bisexual or dioecious, solitary or 2 or more together in a tubular spathe; spathes sessile or borne on elongated peduncles **HYDROCHARITACEAE**
- 1b Terrestrial or epiphytic herbs; flowers $\pm$ zygomorphic or asymmetrical 2
- 2a Fertile stamens 5; flowers unisexual or bisexual; tall herbaceous plants usually with large leaves 3
- 2b Fertile stamen 1; flowers bisexual 4
- 3a Fruit a banana with large black seeds embedded in pith; stems dying after fruiting; sometimes suckering from base **MUSACEAE**
- 3b Fruit a dry, 3-locular capsule; seeds pea-like, with tuft of hairs; rootstock perennial **STRELITZIACEAE**
- 4a Stamen not accompanied by petaloid staminodes; pollen agglutinated into masses (pollinia); ovary 1-locular with numerous ovules on parietal placentas; flowers zygomorphic, median petal (lip) $\pm$ different from lateral petals; plants terrestrial or epiphytic, sometimes climbing or saprophytic **ORCHIDACEAE**
- 4b Stamen accompanied by 1 or more petaloid staminodes; pollen not agglutinated; plants terrestrial; ovary 3-locular 5
- 5a Sepals united into a tube; flowers zygomorphic; anther 2-theous **ZINGIBERACEAE**
- 5b Sepals free; flowers asymmetrical; anther 1-theous **CANNACEAE**

Group 7

- 1a Aquatic herbs; flowers actinomorphic 2
- 1b Plants not aquatic 3
- 2a Rootstock mainly rhizomatous, terrestrial or floating; flowers mainly unisexual, from a tubular or 2-lobed spathe **HYDROCHARITACEAE**
- 2b Rootstock a small corn; flowers bisexual, in 1-6-flowered umbels, bracteate **HYPOXIDACEAE**

- 3a Flowers unisexual, small, twining plants; leaves simple or digitate, with reticulate venation; fruit a 3-winged or 3-angled capsule DIOSCOREACEAE
- 3b Flowers bisexual 4
- 4a Stamen 1; pollen agglutinated into masses (pollinia); ovary 1-locular with numerous ovules on parietal placentas; median inner segment (lip) of perianth $\pm$ different from other segments; terrestrial or epiphytic herbs, sometimes climbing or saprophytic ORCHIDACEAE
- 4b Stamens 3 or 6; pollen not agglutinated into masses 5
- 5a Stamens 3 6
- 5b Stamens 6 7
- 6a Stamens opposite inner perianth segments; saprophytic herbs with a few, narrow basal leaves, or leaves reduced to scales BURMANNIACEAE
- 6b Stamens opposite outer perianth segments; cormous or rhizomatous herbs with narrow leaves, not saprophytic; perianth segments free or united into a tube; flowers actinomorphic or zygomorphic, spicate or paniculate or sometimes solitary or a few together in a spathe IRIDACEAE
- 7a Flowers in umbels (sometimes 1-flowered) subtended by 1 or more spatheous bracts and borne on naked peduncles; herbs with radical leaves; rootstock a bulb AMARYLLIDACEAE
- 7b Flowers solitary or in racemes or corymbs not subtended by spatheous bracts; rootstock not a bulb 8
- 8a Herbaceous geophytes; leaves basal, 1-many; rootstock a tuber or corm HYPOXIDACEAE
- 8b Shrubs or shrublets with a branched or unbranched fibrous stem, densely clothed with persistent bases of old leaves; flowers solitary or fasciculate VELLOZIACEAE

ALISMATACEAE

Aquatic or marsh herbs; milky latex present. Leaves basal; stalks long and expanded below to form an open sheath. Flowers regular. Sepals 3. Petals 3, free. Stamens 3 to many. Ovary comprising 2 to many free carpels. Fruit a drupe, follicle or nutlet.

Key after Obermeyer in F.S.A. 1: 96 (1966).

- 1a Leaves hastate Limnophyton
- 1b Leaves linear-lanceolate to ovate, base cuneate to cordate 2
- 2a Plants dioecious; petals minute or absent; achenes irregularly crowded on receptacle Burnatia
- 2b Plants monoecious; petals larger than sepals; achenes neatly arranged in a circle on receptacle Alisma

Alisma L. (s. Afr.: 1 sp.)
Obermeyer. 1966. F.S.A. 1: 96-97.

0070000

plantago-aquatica L.

Perennial, stoloniferous, aquatic herb, up to 1 m high. Leaves with lamina ovate, rounded to cordate at base. Petioles up to 400 mm long. Inflorescence a much-branched, pyramidal panicle. Petals larger than sepals. *Flowers white or pink; November to March.* Vleis. *Venter 4256.*

W S C N E

Burnatia P. Micheli (s. Afr.: 1 sp.) 0079000
Obermeyer. 1966. F.S.A. 1: 99.

enneandra P. Micheli

Scapose herb, up to 1 m high. Leaves wholly or partially submerged with a flattened petiole up to 0,6 m long.

Male inflorescence forming a delicate finely branched pseudo-umbel. Stamens included, white. *Flowers pale green to purplish; May.* Pans. *Nel 7046.*

W S C N E

Limnophyton Miq. (s. Afr.: 2 spp.) 0072000
Obermeyer. 1966. F.S.A. 1: 97-99.

obtusifolium (L.) Miq.

Annual, aquatic herb, up to 1 m high. Leaves with blades erect, hastate, on long petioles which are triangular in cross-section. Inflorescence a pyramidal panicle. Flowers in 3-7 whorls in lower compound. *Flowers white; February to May.* Pans. *Codd 6071.*

W S C N E

AMARYLLIDACEAE

Lily-like herbs; bulbous or rarely rhizomatous. Leaves mostly strap-shaped or broadly ovate, generally arranged in two ranks, usually glabrous. Flowers in an umbel at top of leafless stalk, $\pm$ regular, subtended by 2–8 involucral bracts. Perianth segments 3 + 3, showy. Stamens 6. Ovary inferior, often visible as a swelling at base of a long perianth tube, 3-locular. Fruit a capsule or fleshy berry. Seeds black.

Key after Dyer, Gen. 2: 947–948 (1976).

- 1a Fruit a berry 2
- 1b Fruit a capsule 6
- 2a Flowers many, umbellate or capitate, usually on long peduncles; spathe valves 4–6 3
- 2b Flowers solitary, appearing at ground level, without leaves at time of flowering; spathe valves 2 5
- 3a Perianth funnel-shaped or tubular with small erect lobes *Clivia*
- 3b Perianth salverform 4
- 4a Bifarious bulb; leaves distinctly distichous, usually thick and fleshy, without a distinct middle nerve, but with many equal parallel nerves, sometimes hairy *Haemanthus*
- 4b Rhizomes or globose bulb with distinct rhizomatous part; leaves not distinctly distichous, herbaceous in texture, with a distinct middle nerve and arcuating lateral nerves, always glabrous *Scadoxus*
- 5a Stamens uniseriate *Gethyllis*
- 5b Stamens biseriate *Apodolirion*
- 6a (1) Perianth with a corona; filaments of stamens fused below to form a cup *Pancratium*
- 6b Perianth without a corona 7
- 7a Seeds flattened, ovate to oblong with a shiny skin, usually appearing winged; spathe valves 2–4 *Cyrtanthus*
- 7b Seeds globose or angled by pressure; spathe valves 2 8
- 8a Perianth actinomorphic; stamens actinomorphic or sometimes declinate 9
- 8b Perianth zygomorphic; stamens declinate 15
- 9a Perianth small, 10–20(–30) mm; segments free or united at base, spreading or erecto-patent 10
- 9b Perianth larger, 40–150 mm long with a well developed tube, salverform or funnellform 11
- 10a Flowers $\pm$ 100 per umbel; stamens terete with unappendaged filaments *Boophane*
- 10b Flowers 5–15 per umbel; stamens with filaments appendaged basally *Nerine*
- 11a Flowers solitary, peduncle subterranean; leaves 1–few, hysteranthous *Apodolirion*
- 11b Flowers in many-flowered exerted umbels; leaves few to many, distichous 12
- 12a Pedicels becoming firmer, but not elongating or spreading in fruit; peduncle persistent; capsule membranous; leaves perennial, growing out again after dormancy, apices of all but younger truncate (scar tissue), synanthous 13
- 12b Pedicels elongating, spreading and thickening in fruit; peduncle becoming detached when seeds are mature; capsule fibrous, often obtriangular; leaves annual, usually appearing after flowering 14
- 13a Leaves arranged in a vertical distichous pattern, forming a pseudostem *Crinum*
- 13b Leaves bilabellately arranged, usually flat on ground *Ammocharis*
- 14a Umbel with $\pm$ 100 flowers; ovules 1 (few) in each locule *Boophane*
- 14b Umbel with $\pm$ 30 flowers; ovules few to many in each locule *Brunsvigia*
- 15a (8) Leaves present at time of flowering, rosulate; perianth tube long, narrow *Crinum*
- 15b Leaves usually absent at time of flowering, distichous (at least at an early stage); perianth tube 0 or short or $\pm$ half as long as limb, funnel-shaped 16
- 16a Pedicels becoming firmer, but not elongating in fruit; flowers delicate; capsule globose, membranous, disintegrating, with bulging seeds *Nerine*
- 16b Pedicels elongating, spreading and thickening when setting fruit; flowers large and firm; peduncle becoming detached when seeds have matured; capsule 3-angled, dry *Brunsvigia*

Ammocharis Herb. (s. Afr.: 3 spp.) 1190000

Milne-Redhead & Schweickerdt. 1939. J. Linn. Soc., Bot. 52: 189.

coranica (Ker Gawl.) Herb. (= *Amaryllis coranica* Ker Gawl.)

Geophyte, up to 300 mm tall. Bulb ovoid, up to 160 mm in diameter, up to 250 mm long. Pedicels as long as, or longer than perianth tube. Apex of perianth lobes spirally recurved. Leaves strap-like, falcate. Umbel 3–56-flowered. Flowers pink to pinkish copper-brown; October to December. Bushveld and mopani veld. Codd & Dyer 4672.

W S C N E

Apodolirion Baker (s. Afr.: 4 spp.) 1187000

Baker. 1896. F.C. 6: 197–198.

Genus under revision. The following species occurs in the area according to Retief in Arnold & De Wet, Plants of southern Africa: names and distribution (1993).

buchananii Baker

Boophane Herb. (s. Afr.: 5 spp.) 1168000

Baker. 1896. F.C. 6: 242.

Dyer. 1952. Flower. Pl. Afr. 29: t. 1141.

disticha (L.f.) Herb.

Geophyte, up to 300 mm tall. Bulb 120–170 mm in height, 100–150 mm in diameter with a thick tunic of dry membranous leaf bases. Leaves distichous. Inflorescence densely many-flowered. *Flowers bright pink; October to January.* Grassland. Letty 209.

W S C N E

Brunsvigia Heist. (s. Afr.: 16 spp.) 1177000

Dyer. 1950. *Herbertia* 6: 63–83.

Dyer. 1951. *Herbertia* 7: 45–64.

grandiflora Lindl.

Geophyte, up to 400 mm tall. Bulb oval with no neck. Leaves lingulate, pale green, falcate, flat, erect, roughish. Perianth 6-parted, nearly equally spreading. *Flowers pink; January.* Grassland. Devenish 568.

W S C N E

natalensis Baker

Geophyte, up to 250 mm tall. Leaves and inflorescence developing at the same time. Pedicels 100–120 mm long. Leaves generally rough, at least on upper surface, tough. Perianth $\pm$ 40 mm long. *Flowers deep pink; November to February.* Grassland, streambanks, stony hillsides. Kluge 1517.

W S C N E

radulosa Herb.

Geophyte, up to 500 mm tall. Leaves and inflorescence developing at the same time. Pedicels 200–300 mm long. Perianth 45–55 mm long. Leaves spreading on ground, thick and tough. *Flowers red or pink; December to February.* Grassland, marshy areas, swamps. Anderson A138.

W S C N E

Clivia Lindl. (s. Afr.: 4 spp.) 1170000

Dyer. 1943. *Flower. Pl. Afr.* 23: t. 891.

caulescens R.A. Dyer

Evergreen, perennial herb, up to 0.65 m high. Leaves several, distichous, strap-like, 300–400 $\times$ 30 mm, dark green. Peduncle $\pm$ 300 mm long. Umbel 15–20-flowered. Perianth $\pm$ 40 mm long. *Flowers deep red, green-tipped, with yellow margins; September to March.* Forest. Dyer 4401.

W S C N E

Crinum L. (s. Afr.: 21 spp.) 1189000

Verdoorn. 1973. *Bothalia* 11: 27–52.

bulbispermum (Burm. f.) Milne-Redh. & Schweick.

Perennial herb, up to 0.9 m high. Leaves over 50 mm broad at middle. Perianth segments forming a narrow

trumpet shape. Anthers grey or brown. Old flowers drying pink or red. Fruit not beaked. New leaves many. *Flowers white with a dark red keel; September to November.* Along rivers and streams or in damp depressions in black clay or sandy soil. Codd 4773.

W S C N E

buphanoides Welw. ex Baker

Perennial herb, up to 300 mm tall. Perianth tube straight, cylindrical. Inflorescence over 200 mm tall. Umbels many-flowered. Bud cernuous. Leaves distichous. Plants grow in dry areas. *Flowers white to pink with deep red keels; October to January.* Deep sand or loam in dry areas. Codd 6229.

W S C N E

delagoense I. Verd.

Perennial herb, up to 0.6 m high. Peduncle up to 0.6 m long. Pedicels up to 70 mm long. Perianth tube dying back to a short crown on fruit. Leaves dark or grass green, rather thick. *Flowers white with a deep rose or purplish red dorsal keel; November to February.* Bushveld, lowveld, deep sand. Van der Schijff 2879.

W S C N E

foetidum I. Verd.

Perennial herb, up to 250 mm tall. Perianth tube $\pm$ 100 mm long. Leaves comparatively few, $\pm$ 11, up to 150 mm broad, blue-green (not glaucous), rather thin. Perianth predominantly white with long acuminate segments. *Flowers white; November.* Open woodland. Louw 3460.

W S C N E

graminicola I. Verd.

Perennial herb, up to 300 mm tall. Peduncle up to 300 mm long. Perianth tube persisting like a beak on fruit. Leaves dark or grass green, rather thick. *Flowers light pink to deep rose; November to February.* Grassland, sandy soil. Codd 2127.

W S C N E

lugardiae N.E. Br.

Perennial herb, up to 300 mm tall. Leaves narrow, most narrower than 30 mm at middle, strongly undulate, margins finely ciliate-dentate. Perianth segments forming a rather wide trumpet shape with revolute apices. Old flowers drying brown. Fruit beaked. *Flowers white with a deep rose keel; October to January.* Grassy depressions, black turf flats. Letty 17.

W S C N E

macowanii Baker

Perennial herb, up to 0.9 m high. Leaves over 50 mm broad at middle. Perianth segments forming a wide trumpet shape. Anthers black showing up on white inside. Old flowers drying brown. Fruit beaked. New leaves few in centre. *Flowers white with a*

rose-coloured keel; October to January. Grassland, along rivers, in gravelly soil or on sandy flats. Codd 8067.

W S C N E

minimum Milne-Redh.

Perennial herb, up to 200 mm tall. Open flowers spreading horizontally and then become nodding. Peduncle short, 40–150 mm long. Umbel 1- or rarely 2-flowered. Leaves flaccid, narrow, 3 mm broad, smooth on margins. Flowers white with a deep rose keel; August to November. Pebbly, sandy soil on gentle slopes, open patches near rivers. Theron 2013.

W S C N E

paludosum I. Verd.

Perennial herb, up to 0.55 m high. Open flowers suberect. Median leaves up to 50 mm broad, measured shortly above base, flaccid, somewhat glaucous green. Flowers up to 7 in an umbel. Stamens declinate. Flowers white to delicate pink to deeper pink; November to January. Pans, vleis, periodic streams. Verdoorn 2496.

W S C N E

Cyrtanthus L.f. (s. Afr.: 51 spp.) 1191000

Dyer & Reid. 1984. A review of the southern African species of *Cyrtanthus*.

bicolor R.A. Dyer

Bulbous herb, up to 250 mm tall. Perianth 25–30 mm long, lobes 10–12 mm long. Leaves linear, shorter than peduncles. Flowers 3–10 in an umbel, nodding. Flowers red or yellow; August to November. Rocky mountain grassland. Galpin 477.

W S C N E

breviflorus Harv.

(= *C. luteus* Baker)

Bulbous herb, up to 200 mm tall. Flowers erect, 20–25 mm long. Leaves filiform, usually absent at flowering in drier habitat, up to 18 mm wide in moist habitat and present at flowering. Umbel 1–3-flowered or up to 10-flowered. Flowers bright yellow; March to December. Grassland, marshes. Mohle 345.

W S C N E

contractus N.E. Br.

Bulbous herb, up to 200 mm long. Bulb 40–60 mm in diameter. Leaves 2 or 3, developing after the flowers, 300–500 × 8–12 mm, linear. Perianth 65–75 mm long. Peduncle red. Flowers scarlet-red to carmine; July to June. Grassland. Obermeyer sub PRE 37823.

W S C N E

eucallus R.A. Dyer

Bulbous herb, up to 500 mm tall. Flowers 1–6 per umbel. Perianth 45–55 mm long, throat 20 mm in diameter, lobes 25–30 × 10–30 mm, spreading. Flowers

red; December to January. Rocky ledges. Ising & McNeil 31A.

W S C N E

flanaganii Baker

Bulbous herb, up to 200 mm tall. Bulb 30 mm in diameter. Flowers more than 4 per umbel. Perianth tubular, not constricted at throat; perianth lobes ± 15 mm long. Leaves 10–20 mm broad. Flowering September to January. Marshy conditions. No specimens in PRE.

W S C N E

galpinii Baker

Bulbous herb, up to 200 mm tall. Perianth 50–80 mm long, narrow basal portion of tube 12–20 mm long. Leaves 3–5 mm broad, usually 1 from each bulb. Flowers bright red to pink; May to August. Mountainsides. Buitendag 532.

W S C N E

huttonii Baker

(= *C. elliotii* Baker)

Bulbous herb, up to 450 mm tall. Leaves 2 or 3, contemporary with the flowers, 25–40 mm broad, 500–600 mm long. Perianth 35–45 mm long, lobes 10–15 mm long. Flowers orange-red to dark red; November to January. Mountainsides, rock ledges in leaf mould, streambanks. Van der Schijff 4564.

W S C N E

junodii P. Beauv.

Bulbous herb, up to 500 mm tall. Perianth tube 4–5 times as long as lobes. Flowers 6–9 in an umbel, nodding or subpendulous. Flowers with tube red, lobes yellow; December to January. Forest, streambanks. McMurtry 4282.

W S C N E

stenanthus Baker var. **stenanthus**

Bulbous herb, up to 300 mm tall. Bulb ± 20 mm in diameter. Perianth 25–30 mm long. Perianth with tube very slender, constricted at throat, lobes spreading or recurved. Flowers red, purplish red or greenish red, lobes sometimes green; September to December. Mountain grassland. Fourie 2823.

W S C N E

stenanthus Baker var. **major** R.A. Dyer

Bulbous herb, up to 300 mm tall. Bulb ± 20 mm in diameter. Perianth 35–45 mm long, slightly constricted at throat; perianth tube very slender, lobes becoming recurved. Flowers yellow; October to March. Mountain grassland. Galpin 654.

W S C N E

thorncroftii C.H. Wright

Bulbous herb, up to 250 mm tall. Leaves 3–5 mm broad. Perianth 30–40 mm long, narrow basal portion of tube 5–10 mm long. Flowers pale salmon-pink; February to July. Grassland. Stalmans 569.

W S C N E

tuckii Baker var. **transvaalensis** I. Verd.

Bulbous herb, up to 450 mm tall. Perianth 37–50 mm long, lobes 6–9 mm long, tube curved, dilated gradually from base to a throat 8–9 mm in diameter. *Flowers red* throughout; September to November. Grassland. *Drews 44*.

W S C N E

Gethyllis L. (s. Afr.: 22 spp.)

1186000

Baker. 1896. F.C. 6: 193–196.

Genus under revision. The following species occurs in the area according to Retief in Arnold & De Wet, *Plants of southern Africa: names and distribution* (1993).

spiralis (Thunb.) Thunb.**Haemanthus** L. (s. Afr.: 21 spp.)

1167000

Snijman. 1984. JI S. Afr. Bot., Suppl. 12.

Snijman & Van Wyk. 1993. S. Afr. J. Bot. 59,2: 247–250.

humilis Jacq. subsp. **humilis**

(= *H. nelsonii* Baker)

Geophyte, up to 300 mm tall. Leaves prostrate or recurved. Umbel loose, hemispherical. Perianth 7–16(–18) mm long, tube 1–6(–7) mm long, segments 4–10(–14) mm long. Stamens equalling perianth segment or exserted by up to 5(–8) mm. *Flowers rose-pink to white; January to February*. Bushveld, hillsides, rock crevices. *Van Jaarsveld 3329*.

W S C N E

humilis Jacq. subsp. **hirsutus** (Baker) Snijman

(= *H. hirsutus* Baker)

Geophyte, up to 300 mm tall. Leaves recurved to suberect. Umbel stiff, widely obconical to hemispherical. Perianth (15–)16–26 mm long, tube 5–12 mm long, segments 10–21 mm long. Stamens exserted by 5–15 mm. *Flowers pale pink to white; November to February*. Grassland, rock crevices. *Strey 3064*.

W S C N E

montanus Baker

(= *H. amarylloides* sensu Baker, non Jacq.)

Geophyte, up to 300 mm tall. Plant deciduous. Leaves entirely glabrous, erect. Spathe valves 5–8, membranous, soon becoming reflexed. *Flowers white to pink; October to December*. Grassland, riverbanks, dry vleis, poorly drained flats. *Devenish 179*.

W S C N E

pauculifolius Snijman & A.E. van Wyk

Evergreen, bulbous herb, up to 150 mm tall. Leaf mostly solitary; blade velutinous on both surfaces. Umbel compact, compressed, 150–300 mm wide. *Flowers*

8–19; pedicels 1–3 mm long; perigone narrowly funnel-shaped, 25–35 mm long with a narrow tube, 10–13 mm long; white; May to July. Shade and semishade, under weakly developed gallery bush or arid bushveld in transition between kloof forest and open rock ledges. *Archer, Reid & De Sousa 1070*.

W S C N E

Nerine Herb. (s. Afr.: 22 spp.)

1175000

Baker. 1896. F.C. 6: 209–215.

angustifolia (Baker) Baker

Geophyte, up to 0.9 m high. Pedicels glandular. Scape glabrous or with short hairs. Leaves usually 5, linear. Plants solitary. *Flowers deep pink; November to April*. Grassland, vleis, marshes, swampy conditions. *Codd 4763*.

W S C N E

frithii L. Bolus

Geophyte, up to 400 mm tall. Pedicels glabrous. Appendages of filaments forming a cup with rim fringed, with jagged, irregular outgrowths. *Flowers pink; September to April*. Grassland. *Hanekom 1820*.

W S C N E

gaberonensis Bremek. & Oberm.

Geophyte, up to 250 mm tall. Perianth segments fused at base. Leaves filiform. *Flowers deep pink; February to March*. Bushveld and grassland. *Venter 5918*.

W S C N E

gracilis R.A. Dyer

Geophyte, up to 250 mm tall. Perianth segments $\pm$ 10 mm long, elliptic-oblong with margin undulate. Appendages of filaments 2-horned. *Flowers pink or white, suffused with pink; February to March*. Grassland, riverbanks, vleis. *Codd 6375*.

W S C N E

krigei W.F. Barker

Geophyte, up to 360 mm tall, caespitose. Leaves erect, spirally twisted, 20 mm in diameter. Pedicels glabrous. Umbels up to 300 mm in diameter. *Flowers pink; January to February*. Grassland, damp depressions, clay soil. *Codd 6374*.

W S C N E

laticoma (Ker Gawl.) T. Durand & Schinz

(= *N. falcata* W.F. Barker.)

Geophyte, up to 300 mm tall. Pedicels glabrous, woody in fruit. Leaves broader than 10 mm, distichous, flat on ground or erect. Umbel up to 300 mm in diameter. *Flowers pinkish mauve; January to February*. Open grassland, turf soil between dolomite slabs. *Barker 534*.

W S C N E

platypetala Macneil

Geophyte, up to 400 mm tall. Pedicels glandular pubescent. Appendages of filaments fused below with apices acute or acuminate. Perianth segments oblanceolate, 24 × 6 mm. *Flowers pink; January to March.* Marshes, vleis. *Mauve & Toelken 4521.*

W S C N E

rehmannii (Baker) L. Bolus

(= *Hessea rehmannii* Baker)

Geophyte, up to 250 mm tall. Perianth actinomorphic with segments linear, much crisped, small, 8 × 1,5 mm. Stamens declinate, connivent. *Flowers white; January to March.* Rocky grassland. *Oliver & Mauve 4975.*

W S C N E

Pancratium L. (s. Afr.: 1 sp.)

1202000

Björnstad. 1973. Norw. J. Bot. 20: 281.

tenuifolium Hochst. ex A. Rich.

(= *P. chapmanii* Harv.)

Geophyte, up to 400 mm tall. Corona longer than free filaments. Free filaments shorter than 20 mm, anthers shorter than 10 mm. Leaves linear, 1–7, up to 350 mm long, 3–10 mm broad. Perianth with tube (7–)9–14 (–17) mm long, pale green; lobes 50–100 mm long,

folded backwards. *Flowers white; October to January.* Woodland. *Van der Schijff 882.*

W S C N E

Scadoxus Raf. (s. Afr.: 3 spp.)

1167010

Björnstad & Friis. 1974. Norw. J. Bot. 21: 243–275.

Friis & Nordal. Norw. J. Bot. 23: 63–77.

multiflorus (Martyn) Raf. subsp. **multiflorus**

(= *Haemanthus multiflorus* Martyn,

= *Haemanthus sacculus* E. Phillips)

Geophyte, up to 300 mm tall. Perianth tube usually shorter than 15 mm. Perianth segments usually narrower than 2,5 mm. Very small to robust plants. *Flowers red; October to November.* Grassland and thorn scrub. *Codd 9808.*

W S C N E

puniceus (L.) Friis & Nordal

(= *Haemanthus magnificus* Herb.,

= *Haemanthus natalensis* Pappe ex Hook.)

Perennial herb, up to 0,75 m high. Leaves 2–7, forming a 5–500 mm long false stem by their sheathing parts, free part of petiole shorter than 100 mm. Involucral bracts obvious, 30–85 mm long. *Flowers white and orange-red to pinkish; September to December.* Woodland, rocky slopes. *Codd 5618.*

W S C N E

APONOGETONACEAE

Freshwater aquatic herbs with a tuberous rhizome. Leaves basal, long and narrow, sometimes with a floating blade. Inflorescence a forked spike. Perianth segments 1–3. Stamens 6 or more. Fruit a follicle.

Aponogeton L.f. (s. Afr.: 7 spp.)

0065000

Obermeyer. 1966. F.S.A. 1: 85–92.

Van Bruggen. 1973. Bull. Jard. bot. nat. Belg. 43: 193.

desertorum Zeyh. ex A. Spreng.

Freshwater aquatic. Rhizome tuberous. Tuber globose, 10–20 mm in diameter. Lamina oblong-lanceolate, base cordate. Scape swollen above. Flowers in long, cylindrical, tapered spikes. Spikes bifid with flowers arranged all around axis. *Flowers yellow.* Fresh water, rock pools or temporary river pools. *Bremekamp & Schweickerdt 39.*

W S C N E

juncus Lehm. ex Schtdl. subsp. **juncus**

(= *A. spathaceus* E. Mey. ex Hook. f.)

Freshwater aquatic. Rhizome tuberous. Tuber globular or obovoid. Leaves 40–430 mm long, awl-shaped, seldom gradually expanded into a very narrowly lanceolate blade. Inflorescence with 2 spikes. *Flowers white or pink; October to April.* Shallow water, pools, swamps, flood plain pans, dams. *Skead 390.*

W S C N E

juncus Lehm. ex Schtdl. subsp. **natalense** (Oliv.) Oberm.

(= *A. natalense* Oliv.)

Freshwater aquatic with tuber. Leaves with a distinct blade, mostly submerged or emerged. Petiole up to 0,9(–3,0) m long. Inflorescence with 2 spikes, ± 50 mm long. *Flowers turned in all directions, white; September to April.* Deep water in rivers, ponds, streams, marshes. *Mauve 4261.*

W S C N E

juncus Lehm. ex Schtdl. subsp. **rehmannii** (Oliv.) Oberm.

(= *A. rehmannii* Oliv.)

Freshwater aquatic with tuberous rhizome. Leaves with a distinct blade, almost always floating. Petiole up to 300 mm long. Inflorescence with 2 spikes, ± 15 mm long. *Flowers turned in all directions, white or pale pink; November to April.* Temporary, shallow pools, flooded pans, muddy banks. *Morris & Engelbrecht 1140.*

W S C N E

stuhlmannii Engl.
(= *A. gracilis* Schinz)

A delicate, fugitive plant. Rhizome tuberous. Leaves linear, petiolate and floating, seldom subulate and submerged. Petiole up to 170 mm long. Spike sim-

ple, few-flowered. Perianth segments deciduous, small. *Flowers white; January to March.* Small waterworn pools in sandstone ridges or granite. *Repton 4714A.*

W S C N E

ARACEAE

Aquatic or terrestrial herbs; monoecious or dioecious. Stems rhizomatous or tuberous with watery or milky juice. Leaves simple or compound, sheathing at base. Flowers small, arranged on a spadix, enclosed by an often showy spathe. Perianth 4–6, free or with connate segments. Stamens 4–6, free or united. Ovary superior or submersed in spadix. Fruit a berry.

Key after Dyer, Gen. 2: 893 (1976).

- 1a Aquatic, free-floating herb, with a rosette of spatulate leaves. **Pistia**
- 1b Terrestrial herbs with tuberous rhizomes **2**
- 2a Leaves decompound, ternate at base, pinnate with leaflets opposite or subopposite; plants solitary, 1-leaved; stamens fused into a tube **Gonatopus**
- 2b Leaves simple **3**
- 3a Spathe leaf-shaped and green like spadix **Acorus**
- 3b Spathe not as above **4**
- 4a Spathe convolute below, persistent, usually on a long peduncle and showy **Zantedeschia**
- 4b Spathe tubular below, tardily deciduous, usually on a short peduncle and inconspicuous **Stylochiton**

Acorus L. (s. Afr.: 1 sp.)

0694000

Ubbink & Breidenkamp. 1985. *Bothalia* 15: 547.

calamus L.*

Perennial herb. Strongly pungent aromatic oils present in all parts of plant. Leaves sword-shaped, 0.8–2.0 m long. Spathe leaf-shaped and green like spadix. *Spadix appears lateral, green. Flowering January.* Shallow, slow-flowing or stagnant water adjoining streambank edges, swamp areas. Native to Europe and Asia. *Ubbink 1188.*

W S C N E

Gonatopus Hook. f. ex Engl. (s. Afr.: 2 spp.)

0693000

Brown. 1901. *F.T.A.* 8: 196.

Obermeyer & Bogner. 1978. *Flower. Pl. Afr.* 45: t. 1782.

angustus N.E. Br.

(= *G. rhizomatosus* Bogner & Oberm.)

Perennial herb, up to 300 mm tall. Pinnae linear to oblong, strongly decurrent at base. Petioles 150–250 mm long. Plant producing 1 compound leaf annually and 1 or rarely 2 inflorescences beside it later. *Spadix pinkish buff with black stripes. Flowering November to February.* Bushveld, shady rock pockets. *Codd 7814.*

W S C N E

Pistia L. (s. Afr.: 1 sp.)

0791000

Brown. 1897. *F.C.* 7: 33.

stratiotes L.

Aquatic herb. A floating, stoloniferous, stemless herb with a tuft of fibrous roots. Leaves sessile in a rosette, cuneate-obovate, with flabellate veins, raised below. *Spathes* axillary with very short peduncles, *green.* Still, fresh water, streams, rivers, pans. *Nel 7048.*

W S C N E

Stylochiton Lepr. (s. Afr.: 1 sp.)

0764000

Obermeyer. 1972. *Flower. Pl. Afr.* 42: t. 1648.

natalense Schott

Perennial herb, up to 400 mm tall. Leaves radical, 1–4, blade hastate to sagittate, variable in size and shape, petiole up to 300 mm long. Spathe 80–130 mm long, fused below for ± half its length, bulbous at base, tubular above with free margins recurved, inside wine-red below, cream-coloured above. *Spadix greyish white. Flowering October to December.* Woodland, bushveld and margins of plantations. *Venter 1272.*

W S C N E

Zantedeschia Spreng. (s. Afr.: 6 spp.)

0748000

Letty. 1973. *Bothalia* 11: 5–26.

aethiopica (L.) Spreng.

Evergreen perennial herb, up to 0.6 m high. Leaves broadly ovate-cordate, 150–200 × 100–150 mm, up to 0.6 m long. Female flowers interspersed with stami-

nodes. *Spathe* ivory-white with bright green at base. Flowering September to February. Vleis, marshy depressions. Codd 8120.

W S C N E

albomaculata (Hook.) Baill. subsp. **albomaculata**

Perennial herb, up to 0,75 m high. Leaves either immaculate or conspicuously maculate, usually oblong-hastate, rarely ovate-hastate (and then white-spotted), lower lobes short to triangular-spreading or strap-shaped. *Spathe* with limb $\pm$ spreading, usually tapering gradually to apex, white or ivory-coloured. Flowering November to March. Vleis, marshy soil beside rivers or streams, grassy hillsides, forest margins. Hanekom 1993.

W S C N E

albomaculata (Hook.) Baill. subsp. **macrocarpa**

(Engl.) Letty
(= *Z. macrocarpa* Engl.)

Perennial herb, up to 0,75 m high. Leaves usually triangular-hastate, sparsely maculate. Berries large, up to 20 mm in diameter. *Spathe* $\pm$ truncate, abruptly acuminate, cream or straw-coloured. Flowering November to January. Marshy ground beside streams, grassy vleis. Letty 327.

W S C N E

elliottiana (Watson) Engl.

(= *Richardia elliottiana* Watson)

Perennial herb, up to 0,6 m high. Leaves ovate-orbicular, maculate. *Spathe* without a purple blotch at base,

golden yellow. Flowering November. Known only from cultivated specimens. Galpin 11820.

W S C N E

jucunda Letty

Perennial herb, up to 0,6 m high. Leaves triangular-hastate, 170–300 $\times$ 50–150 mm, densely maculate with long, white, translucent spots. *Spathe* golden yellow. Flowering November to December. Mountainsides. Barnard & Mogg 991.

W S C N E

pentlandii (Watson) Wittm.

(= *Richardia pentlandii* Watson)

Perennial herb, up to 0,6 m high. Leaves oblong-hastate, blade up to 350 mm long and 150 mm wide, usually immaculate. *Spathe* lemon-chrome-yellow with a purple blotch at base. Flowering November to December. Grassland, among rocks. Codd 8227.

W S C N E

rehmannii Engl.

Deciduous perennial herb, up to 0,8 m high. Leaves narrowly lanceolate, 150–400 $\times$ 20–70 mm. Peduncle up to 0,6 m long. *Spathe* 110–120 mm long, 15–20 mm broad, white-pink-dark maroon. Flowering November to December. Forest margins, grassland, among rocks. Buitendag 1138.

W S C N E

ARECACEAE

Palms: trees, shrubs or prickly scramblers; monoecious or dioecious. Trunks usually unbranched. Leaves in mature plants in a terminal crown, compound, pinnate or palmate, with folds tearing apart with unfolding petiole and/or rachis often armed with prickles. Flowers numerous. Sepals and petals 3 each, free or fused below. Stamens 6. Fruit a drupe or berry.

Key after Dyer, Gen. 2: 890–891 (1976).

- 1a Leaves pinnate; fruit fleshy (date-like), or scaly, or hard and smooth, $\pm$ 30 mm in diameter; lower leaf pinnae modified into spines; fruit fleshy, date-like **Phoenix**
- 1b Leaves fan-shaped; fruit globose, hard, more than 30 mm in diameter 2
- 2a Leaves costa-palmate (petiole extending into a short acute rachis); fruit 1-seeded, shortly stalked; inflorescence freely branched; male flowers 1 or 2 in grooves of terete spadices **Hyphaene**
- 2b Leaves palmate (petiole truncate at apex); fruit 3-seeded, sessile; spikes simple, short; male flowers many, in grooves of stout spadices **Borassus**

Borassus L. (s. Afr.: 1 sp.)

0555000

Coates Palgrave. 1977. Trees of southern Africa: 69.

aethiopum Mart.

(= *B. flabellifer* L. var. *aethiopum* (Mart.) Warb.)

Tree, up to 20 m high. Bole straight with a swelling $\pm$ halfway up. Leaves fan-shaped, 3–4 m long. Fruits 120–180 mm in diameter, orange-brown when mature. Riverbanks. Codd & Dyer 4701.

W S C N E

Hyphaene Gaertn. (s. Afr.: 2 spp.)

0553000

Palmer & Pitman. 1972. Trees of southern Africa: 349–354.

coriacea Gaertn.

(= *H. natalensis* Kunze)

Plant forming dense, low clumps or otherwise a tree, up to 9 m high. Leaves fan-shaped, grey-green. Fruit hard, shiny, dark brown, up to 63 mm in diameter, often like short, fat pears in shape. Riverbanks. Lang sub TRV 33323.

W S C N E

petersiana Klotzsch
(= *H. benguelensis* Welw. var. *ventricosa* (Kirk) Furtado,
= *H. ventricosa* Kirk)

Tree up to 18 m high. Stem long, clean, often with a bulge near middle or in upper parts. Leaves fan-shaped, clustered at top of stem. Leaf blade $\pm$ 0,6 m across, folded, with many slender segments. Fruit round, hard, shiny, brown. *Lang sub TRV 30877.*

W S C N E

Phoenix L. (s. Afr.: 1 sp.) 0528000
Coates Palgrave. 1977. Trees of southern Africa: 65.

reclinata Jacq.
Tree, up to 10 m high. Leaves pinnate or feather-shaped, 3–4 m long, lowermost leaflets reduced to spines. Fruits oval, 10–15 mm long, bright orange when mature. *Flowers brown; August to November.* Low-lying, open grassland, riverbanks. *Van Wyk 2963.*

W S C N E

BURMANNIACEAE

Slender herbs. Scape very slender with small, mostly basal leaves or scales. Flowers in a bifurcate cyme or solitary. Perianth corolla-like, (3–)6-lobed; tube cylindrical or gibbous, sometimes winged. Stamens 3–6, arising from perianth tube. Ovary inferior, 1-locular. Fruit a capsule, usually crowned with a dry perianth, angled or winged.

Burmannia L. (s. Afr.: 1 sp.) 1382000
Dyer. 1976. Gen. 2: 984.
Obermeyer. 1964. Flower. Pl. Afr. 36: t. 1427.

madagascariensis Mart.
Perennial herb, up to 300 mm tall. Rhizome present. Flowering stems filiform. Leaves linear, 5–8 $\times$ 2 mm.

Perianth (3–)6-lobed, inner lobes smaller than outer or sometimes absent. *Flowers dark purple to pale lilac; August to May.* Swamps, marshes. *Germishuizen 915.*

W S C N E

CANNACEAE

Rhizomatous herbs. Stems annual, covered by sheathing bases or large pinnately veined leaves with distinct midribs. Flowers in terminal racemes. Sepals 3, usually green. Petals 3, shortly connate at base. Stamen 1, petaloid, bearing a half anther laterally; staminodes 1–4, petaloid, the one next to stamen forming a lip. Ovary inferior, 3-locular; style petaloid. Fruit a capsule, triangular, verrucose.

Canna L. (s. Afr.: 2 spp.) 1363000
Dyer. 1976. Gen. 2: 984.

indica L.*
Perennial herb, up to 1,2 m high with tall, annual stems covered by sheathing bases. *Flowers with 3 upper*

petals red, lower 2 yellow, red-tipped and flecked; October to November. Disturbed areas, roadsides. Native to South America. *Stirton 8014.*

W S C N E

COMMELINACEAE

Herbs with $\pm$ succulent stems with swollen nodes. Leaves alternate, with a closed sheath at base enveloping stem. Flowers regular or irregular, borne in boat-shaped bracts (spathes). Sepals 3, green. Petals 3, blue or yellow, free or united into a tube at base. Stamens 6, all fertile or 3 or 4 sterile, often with brightly coloured hairs on filaments. Ovary superior, 3-locular. Fruit a capsule.

Key after Obermeyer & Faden in F.S.A. 4,2: 23 (1985).

- 1a Flowers actinomorphic; stamens 6, all fertile 2
- 1b Flowers slightly to strongly zygomorphic; stamens 6, usually unequal, all fertile or 3 or 4 sterile 4
- 2a Inflorescences axillary, perforating sheaths Coleotype
- 2b Inflorescences terminal or terminal and axillary, never perforating sheaths 3

- 3a Flowers white; petals free; cymes regularly paired **Tradescantia**
 3b Flowers pink or purple to violet; petals united into a tube basally; cymes usually not paired **Cyanotis**
 4a Inflorescences consisting of 1 or 2 cymes enclosed in or closely subtended by folded or obliquely funnel-shaped leafy bracts (spathes); staminodes typically with 4(–6)-lobed anthers **Commelina**
 4b Inflorescences not enclosed in bracts, consisting of 1 to many cymes; staminodes lacking or (if present) with 2- or 3-lobed anthers 5
 5a Capsules 3-valved; fertile stamens 2; 3 or more filaments bearded **Murdannia**
 5b Capsules 2-valved; fertile stamens 3 or 6; all filaments glabrous or 2 bearded and 4 glabrous 6
 6a Fertile stamens 6; ovary and capsule glabrous **Floscopa**
 6b Fertile stamens 3; staminodes 3; ovary and capsule puberulous **Aneilema**

Aneilema R. Br. (s. Afr.: 11 spp.) 0899000
 Obermeyer & Faden. 1985. F.S.A. 4.2: 36–46.

aequinoctiale (*P. Beauv.*) Loudon

Decumbent, perennial herb with ascending or straggling shoots. Leaves distichous. Inflorescences with 2–7 cincinni, puberulous. Sepals puberulous. Lateral stamen filaments bearded. Stems and sheaths often sticky because of presence of hooked hairs. *Flowers yellow; October to April*. Forest, forest margins, along streams. *Brenan 14118*.

W S C N E

brunneospermum Faden
 (= *A. dregeanum* Kunth var. *galpinii* C.B. Clarke)

Tufted, annual herb. Inflorescences composed of (6–) 10–20(–29) cymes. Pedicels puberulous for up to half their length, 2–7 mm long, strongly recurved in fruit. Lower petal smaller than upper 2, different in colour. Capsule bilocular. Seeds dark brown. *Flowers lavender or pale lilac*. Scrub, forest, often in rocky places, partial shade. *Buitendag 1266*.

W S C N E

hockii De Wild.

Tufted, perennial herb with erect to ascending or straggling shoots 0.3–1.2 m high. Leaf margins scabrid. Branches of inflorescence mostly subopposite or subverticillate. Fruiting pedicels erect. Capsules emarginate at apex. *Flowers bluish purple; December to March*. Woodland, bushveld, rocky slopes, partial shade. *Clarke 1549*.

W S C N E

indehiscens Faden subsp. **lilacinum** Faden

Perennial herb with long-trailing vegetative shoots. All 3 petals similar in colour and size. Stamen filaments glabrous. Inflorescence with 3–9, mostly ascending, cincinni. Capsules trilocular. *Flowers pale lilac; February*. Open forest, woodland, thickets, lowveld bush, edges of marshes or along rivers. *Retief et al. 1142*.

W S C N E

longirrhizum Faden

Erect, perennial herb with twining shoots, up to 300 mm tall. Leaf margins smooth. Branches of inflorescence mostly alternate. Fruiting pedicels decurved. Capsules rounded to truncate at apex. *Flowers pale lavender*;

December. Bushed grassland, red loamy soil. *Van Wyk 6007*.

W S C N E

nicholsonii C.B. Clarke

Branched annual up to 0.6 m high. Bracteoles not cup-shaped, apex drawn out into an elongate, swollen, glandular tip. Lateral stamen filaments densely bearded with blue-purple hairs. *Flowers blue to blue-purple or lavender; April*. Bushland and woodland. *Van Wyk 3770*.

W S C N E

schlechteri K. Schum.

Tufted, annual herb. Leaves sessile or subsessile. Inflorescences composed of 3–13 cymes. Pedicels puberulous for more than half their length, strongly recurved in fruit. Seeds pale pinkish grey. *Flowers white*. Woodland. *Schlechter 11748*.

W S C N E

Coleotype C.B. Clarke (s. Afr.: 1 sp.) 0903000
 Obermeyer & Faden. 1985. F.S.A. 4.2: 49–50.

natalensis C.B. Clarke

Perennial with trailing leafy stems. Leaves alternate, spreading, oblong, $\pm 100 \times 15$ –20 mm, apex long-acuminate, base narrowed into a sheath, margin purple or red. Inflorescences sessile. Capsule hairy. *Flowers deep purple*. Woodland, in shade of trees. *Jacobsen 3457*.

W S C N E

Commelina L. (s. Afr.: 16 spp.) 0896000
 Obermeyer & Faden. 1985. F.S.A. 4.2: 24–35.

africana L. var. africana

Spreading, perennial herb up to 500 mm tall. Leaves flat, oblong, narrowed at base, usually glabrous. Mesophytic. *Flowers yellow; November to March*. Grassland, floors of pine plantations. *Vorster 514*.

W S C N E

africana L. var. barberae (C.B. Clarke) C.B. Clarke
 (= *C. karooica* C.B. Clarke,
 = *C. karooica* C.B. Clarke var. *barberae* C.B. Clarke)

Spreading, perennial herb, up to 500 mm tall. Leaves narrow, short, falcate, with margins often crenulate,

folded. Flowers large (upper petals ± 15 mm long). Spathes usually narrow, long-acuminate. *Flowers yellow; November to March*. Grassland. *Hanekom 1490*.

W S C N E

africana L. var. **krebsiana** (Kunth) C.B. Clarke
(= *C. krebsiana* Kunth)

Spreading, perennial herb, up to 500 mm tall. Leaves folded, usually linear, not or hardly narrowed at base, pubescent. Spathes usually short and broad. Plants hispid to densely tomentose. Flowers small (upper petal ± 8 mm long). *Flowers yellow; November to May*. Bushveld, grassland, woodland. *Buitendag 203*.

W S C N E

africana L. var. **lancispatha** C.B. Clarke
(= *C. africana* L. var. *glabriuscula* (T. Norl.) Brenan)

Spreading, perennial herb, up to 500 mm tall. Leaves usually glabrous or glabrescent, broadly to narrowly linear, usually longer than 50 mm, folded. Spathes usually narrow, long-acuminate. *Flowers yellow; November to April*. Grassland, rocky slopes. *Burger 588*.

W S C N E

bella Oberm.

Erect, dwarf shrub, up to 350 mm tall. Capsule triangular. Cymes 2 in each spathe, both lower and upper well developed. Leaf margin white, undulate. Spathes sessile, clustered at apices. Flowers large, petals ± 20 mm in diameter. *Flowers pale blue to lilac; November to January*. Grassland, turf soil. *Smook 1494*.

W S C N E

benghalensis L.

Spreading, annual herb, often with reduced underground flowers. Roots thin. Leaves ovate, green, margin smooth, leaf sheaths often with long red setae at mouth. Spathes obliquely fused, mucilaginous inside when flowering. Capsule quadrate. Widespread weed. *Flowers ink-blue; November to May*. Scrub, grassland, cultivated land. *Zwanziger 384*.

W S C N E

diffusa Burm. f. subsp. **diffusa**

Spreading herb with creeping stems forming short, erect side branches, rooting at nodes. Leaves ovate, $\pm 50 \times 15$ mm. Usually soft, mesophytic plants. A pan-tropical innocuous weed. *Flowers blue; October*. Sandy soil. *Khorommbi 1016*.

W S C N E

diffusa Burm. f. subsp. **scandens** (C.B. Clarke) Oberm.
(= *C. scandens* Welw. ex C.B. Clarke)

Robust, long-stemmed, perennial herb. Leaves linear, $\pm 100\text{--}150 \times 10$ mm. Margin of leaf raised and covered with minute, white pustules. Spathes simply folded, dry inside, pedunculate. *Flowers blue or white; November to May*. Streambanks and riverbanks, often near waterfalls. *Retief & Herman 5*.

W S C N E

eckloniana Kunth

(= *C. weimarckiana* Norl.)

Perennial herb, up to 400 mm tall. Roots thick. Spathes obliquely fused, mucilaginous inside when flowering. Capsule quadrate. Leaves usually linear, soft, smooth. Cymes 2. Seeds globose, with a reticulate testa. *Flowers blue; November to March*. Grassland, bushveld, rocky situations, disturbed areas. *Mauve & Genis 5037A & B*.

W S C N E

erecta L.

(= *C. gerrardii* C.B. Clarke,
= *C. undulata* R. Br.)

Perennial herb, erect or spreading, up to 500 mm tall. Capsule triangular, with dorsal locule indehiscent, tuberculate. Cymes 1 in each spathe. Leaves narrowly ovate-attenuate, 60–120 mm long. Spathes single and shortly pedicelled. *Flowers blue; November to March*. Riverbeds, rocky hillsides, disturbed woodland. *Ellis 3464B*.

W S C N E

forskaolii Vahl

Spreading, annual herb. Spathes obliquely fused, mucilaginous inside when flowering. Capsule quadrate. Roots thin. Leaves oblong to linear, usually greyish green, margin strongly undulate. Leaf sheaths with short, colourless setae at mouth. *Flowers pale sky-blue; January to February*. Bushveld. *Zwanziger 751*.

W S C N E

imberbis Hassk.

Annual herb with long, straggling stems. Spathes obliquely fused, mucilaginous inside when flowering. Capsule quadrate. Roots thin. Leaves (at least upper) sessile and cordate at base. Plants not producing subterranean flowers. Weed. *Flowers blue; March*. Disturbed places. *Mauve 5297*.

W S C N E

livingstonii C.B. Clarke

Perennial herb with spreading, branched stems, up to 300 mm tall. Capsule triangular with all 3 locules dehiscent, smooth. Cymes 1 in each spathe, the upper aborted. Spathes clustered and subsessile at apices of stems. Leaves folded, linear to oblong, eared at base, abruptly narrowed into sheath. *Flowers blue to white; October to April*. Grassland and bushveld. *Sidey 1364*.

W S C N E

modesta Oberm.

Dwarf, glabrescent shrub, up to 300 mm tall. Capsule triangular with all 3 locules dehiscent. Cymes 1 in each spathe. Spathes solitary, rarely with a younger one above. Leaves flat, narrowly linear, ± 4 mm broad, tapered into a sheath. Plants tenuous, saxicolous. *Flowers blue or white; November to March*. Grassland, rocky situations. *Smook 2654*.

W S C N E

petersii Hassk.

Perennial herb, up to 0,8 m high, with long internodes. Leaves narrowly ovate-acuminate, up to 100 × 20 mm, abruptly narrowed at base into a pseudopetiole and a long membranous sheath, dark green above, paler below. Spathe solitary. Upper cyme on a long exerted petiole. Capsule oblong. Seeds long-ellipsoid. *Flowers blue*. No specimens in PRE.

W S C N E

rogersii Burtt Davy

Perennial herb, up to 300 mm tall. Leaves simply folded, dry inside, scleroid, wiry, linear, falcate, up to 30 mm long, placed on abbreviated, imbricate side branches. *Flowers yellow; January to March*. Woodland and grassland. *Venter 12306*.

W S C N E

subulata Roth

(= *C. violacea* C.B. Clarke)

Annual herb, many-stemmed and dome-shaped, up to 250 mm tall. Spathes simply folded, dry inside, proximal end free, convex; subsessile, falcate. Cyme solitary, ± 3-flowered. *Flowers only just exerted at anthesis, one at a time; yellow, orange, pink, apricot, blue or brownish violet; December to March*. Seasonally wet areas such as margins of pans. *Mauve 5291*.

W S C N E

zambesica C.B. Clarke

Straggling, robust, pale green, annual herb. Spathes obliquely fused, mucilaginous inside when flowering. Capsule quadrate. Leaves ovate-acuminate, lamina auriculate at junction with sheath. Seeds globose. *Flowers ink-blue; January*. Scrub forest, bush-groups. *Codd 9441*.

W S C N E

Cyanotis D. Don (s. Afr.: 7 spp.) 0904000

Obermeyer & Faden. 1985. F.S.A. 4,2: 50–56.

lanata Benth.

Annual herb, up to 150 mm tall. Leaves not clasping stem. Spathes usually 2 at some or all nodes. Cymes borne at 1–3(4) nodes on shoot. Basal leaf cluster absent. *Flowers violet, blue, pink or mauve; November to March*. In rock fissures. *Strey 3620*.

W S C N E

lapidosa E. Phillips

Small, spreading, perennial herb. Plants with thin roots from creeping rhizomes. Fertile shoots decumbent, with few many-flowered clusters. Stems purplish. Plants from basal leaf clusters. *Flowers purple, mauve or pink; November to April*. Rocky ledges, forming colonies. *Mauve 5283*.

W S C N E

pachyrrhiza Oberm.

Perennial herb, forming mats. Plant with purple colouring and soft, patent, white pubescence on leaves and flowering stems. Roots emerging from a compact root-crown. Leaves narrowly linear, ± 3 mm broad. Cymes often pedunculate. Fertile shoots decumbent. *Flowers maroon or cerise; October to April*. Montane areas, on quartzite ledges. *Mauve & Retief 5245*.

W S C N E

robusta Oberm.

Robust, perennial herb. Plants with thick roots. Roots emerging from a vertical rhizome. Leaves broadly linear, up to 20 mm broad, in basal clusters. Cymes sessile. Fertile shoots decumbent. *Flowers blue; April*. Rocky ledges of sandstone krantzies, forming colonies. *Muller & Scheepers 165*.

W S C N E

speciosa (L.f.) Hassk.

(= *C. nodiflora* Kunth)

Perennial herb, up to 500 mm tall. Fertile shoots erect, usually with 4–6 flower clusters widely spaced. Rhizome vertical to U-shaped. Roots terete, hard. Pubescence of short, patent hairs. *Flowers pale to deep oriental blue or mauve; October to February*. Grassland. *Codd 2189*.

W S C N E

Floscopa Lour. (s. Afr.: 3 spp.) 0908000

Obermeyer & Faden. 1985. F.S.A. 4,2: 56–58.

glomerata (Willd. ex Schult. & J.H. Schult.) Hassk.

(= *F. rivularis* (A. Rich.) C.B. Clarke,
= *Tradescantia glomerata* Willd. ex Schult. & J.H. Schult.)

Sprawling plants 0,3–1,0 m high. Perennial herb, aquatic, exerted up to ± 0,6 m above water level. Leaves cauline. Inflorescences glandular-pubescent, usually dense. *Flowers purple to mauve; January to April*. Streambanks. *Codd 3768*.

W S C N E

Murdannia Royle (s. Afr.: 1 sp.) 0899010

Obermeyer & Faden. 1985. F.S.A. 4,2: 47.

simplex (Vahl) Brenan

(= *M. sinicum* (Ker Gawl.) Bruckn.)

Gregarious, herbaceous, subscapose, perennial herb, up to 0,6 m high. Leaves mostly basal, linear, up to 200 mm long and ± 10 mm broad. Flowering shoot up to 500 mm tall. Peduncle with a few reduced leaves. Thyrses terminal or terminal and axillary. *Flowers mauve; September to April*. Streambanks. *Story 4849*.

W S C N E

Tradescantia L. (s. Afr.: 1 sp.) 0911000

Obermeyer & Faden. 1985. F.S.A. 4,2: 59–60.

fluminensis Vell.

Perennial herb with decumbent, slender, leafy stems, rooting at nodes. Flowers actinomorphic. Inflorescence terminal. Petals ovate, ± 8 mm long. Leaves ovate-acuminate, abruptly narrowed into a short, broad, open, ciliate sheath. Weed. *Flowers white; October.* Semi-shade, rocky hillsides. *Buitendag 1120.*

W S C N E

zebrina Bosse*

Perennial herb with decumbent, slender leafy stems, rooting at nodes. Flowers actinomorphic. Inflorescences terminal. Leaves ovate-oblong, striped with white to green above, purple below. Weed. *Flowers rose-pink or mauve; February.* Thickets, disturbed situations. Country of origin unknown. *Stalmans 398.*

W S C N E

CYPERACEAE

Grass-like herbs, usually with a perennial rhizome and often growing in moist or wet places. Stems often 3-angled. Leaves often in 3 ranks, grass-like, forming a sheath at base; margins of sheath usually fused. Flowers small, inconspicuous, borne in axils of conspicuous bracts which are arranged in contracted spike- or head-like inflorescences (spikelets). Fruit a small nut. (See also Gordon-Gray, 1995, Cyperaceae in Natal. Strelitzia 2.)

Key partly after Dyer, Gen. 2: 877–879 (1976).

- 1a Spikelets composed of bisexual or bisexual and unisexual florets together and some empty glumes may be present 2
- 1b Spikelets unisexual, or composed of male and one terminal female floret, or sometimes empty glumes present 24
- 2a Glumes spirally arranged, all except 1 or 2 basal and 1 or 2 apical ones with bisexual florets 3
- 2b Glumes either 2-ranked or if spiral, then 2–several basal glumes sterile, upper ones bisexual and apical ones unisexual or sterile 14
- 3a Bisexual florets each accompanied by either 2 thin scales, or one broad adaxial scale, or one abaxial scale, enveloping floret 4
- 3b Bisexual florets with or without scales, but not as above 5
- 4a Bisexual florets each accompanied by 2 thin scales, smaller than and parallel to subtending glume **Lipocarpus**
- 4b Bisexual florets each with one scale; scale abaxial, enveloping floret and exceeding length of subtending glume **Ascolepis**
- 5a Style uniform in thickness, without an expanded base 6
- 5b Style with an expanded base 11
- 6a Flowering stems with nodes and cauline leaves; leaves ligulate; glumes hairy on back, with a terminal lobe or arista **Fuirena**
- 6b Flowering stems generally without nodes, or if nodes present then leaves without ligules; glumes glabrous or nearly so, with or without a short terminal mucro 7
- 7a Glumes several-nerved; leaves slender, tough, usually membranous or hairy at sheath mouth; plants usually occupying grassland **Ficinia**
- 7b Glumes with midnerve and generally 1 or 2 contiguous laterals on either side; peduncles and leaves rarely tough in texture; plants mainly in or near water 8
- 8a Plant usually an annual, tufted or bearing stolons with leafy nodes; inflorescence terminal **Isolepis**
- 8b Plant not as above 9
- 9a Plant leafless; inflorescence subterminal (overtopped by bract), lateral; culm rounded or triangular **Schoenoplectus**
- 9b Plant with distinct leaves 10
- 10a Inflorescence subterminal, lateral; culm triangular, its lower part enclosed by long sheaths of leaves arising from a basal tuber **Bolboschoenus**
- 10b Inflorescence terminal, umbellate or clustered, if subterminal, then containing many spikelets in a rounded cluster **Scirpus**
- 11a (5) Style base usually triangular in outline, persistent on nut; spikelets solitary on peduncle; florets usually with bristles; plants tufted or rhizomatous **Eleocharis**
- 11b Style base button-like or expanded-compressed, in plane of nut; spikelets few to many on peduncle; florets without bristles 12
- 12a Style base button-like, persistent; back of glumes finely pubescent **Bulbostylis**
- 12b Style base falling from nut together with or somewhat later than style; back of glumes glabrous or almost so 13
- 13a Plant with a single flattened spikelet **Abildgaardia**
- 13b Plant with several to many spikelets in a cluster or open umbel **Fimbristylis**
- 14a (2) Glumes 2-ranked, lowest 1 or 2 sometimes uppermost 1 or 2 empty, others bisexual, without perianth, but ad- and abaxial scales may partly envelop each nut 15
- 14b Glumes subdistichously or spirally arranged, few to many; middle glumes each subtending a bisexual or a unisexual floret; subdistichously arranged glumes usually enclosing bristles, sometimes empty 21
- 15a Style 2-branched 16
- 15b Style 3-branched 17
- 16a Spikelets usually of more than 7 glumes and maturing more than 4 achenes; inflorescence usually branched, pseudo-umbellate, rarely capitate **Pycurus**
- 16b Spikelets usually of 4–7 glumes and maturing 1–4 achenes; inflorescence usually capitate, rarely with 1 or 2 peduncled heads in addition **Kyllinga**
- 17a Spikelets with 3 or more sterile bracts at base; axis of spikelets elongated between bisexual florets, thickened and curved exposing nutlets **Schoenus**
- 17b Spikelets with 0–2 sterile bracts at base 18

- 18a Spikelets usually broadest below middle or oblong but not cylindric, not disarticulating, usually with more than 7, often many, glumes 19
- 18b Spikelets more or less uniform in width, often cylindric, disarticulating eventually from a cushion below lowest fertile glume, usually with 4-7(-12) glumes 20
- 19a Glumes winged on keel; plant strongly aromatic *Courtoisina*
- 19b Plant not as above *Cyperus*
- 20a Mainly perennials. *Mariscus*
- 20b Annual; spikelet 1-flowered *Alinula*
- 21a (14) Styles 2-branched; branches long or short; achenes biconvex, crowned with persistent smooth style base *Rhynchospora*
- 21b Styles 3- or 6-branched 22
- 22a Bristles 6 with each floret; spikelets in tight, globose, drooping heads; lowest floret of spikelet usually perfecting an achene ... *Carpha*
- 22b Bristles fewer than 6, or 0 23
- 23a Flowering stems with nodes and leaves, robust, with many spikelets; leaves scabrous on margin and keel *Cladium*
- 23b Flowering stems with small heads and without nodes or leaves; leaves basal, not scabrid *Tetraria*
- 24a (1) Female floret not enclosed within a utricle; achenes generally ovoid, on a gynophore, apex of which may be disc-like ... *Scleria*
- 24b Female floret surrounded by a utricle within glume 25
- 25a Female florets with a fimbriate membrane surrounding base of utricle *Coleochloa*
- 25b Female florets without a fimbriate membrane 26
- 26a Female florets enclosed within a utricle which is split down unevenly in one or two places; rudimentary axis with male florets usually exerted from utricle *Schoenoxiphium*
- 26b Female florets enclosed within a closed, bottle-shaped, entire or toothed utricle; rudimentary axis usually present within utricle *Carex*

Abildgaardia Vahl (s. Afr.: 5 spp.) 0471020

Gordon-Gray. 1966. Jl S. Afr. Bot. 32: 129-152.

Lye. 1971. Mitt. bot. StSamml., Münch. 10: 539-547.

ovata (Burm. f.) Kral

(= *Fimbristylis monostachya* Hassk.)

Tufted, perennial herb, up to 300 mm tall. Inflorescence usually with 1 spikelet, occasionally 2. Mature nut obovate, not clawed. *Glumes more than 4.5 mm long, pale straw-coloured or greenish white. Flowering October to March.* Grassland, river banks. *Smook* 952.

W S C N E

Alinula J. Raynal (s. Afr.: 1 sp.) 0459050

Goetghebeur & Vorster. 1988. Bull. Jard. bot. nat. Belg. 58: 457-465.

paradoxa (Cherm.) Goetgh. & Vorster

(= *Lipocarpa paradoxa* Cherm.,

= *Mariscus paradoxus* (Cherm.) Cherm.)

Annual herb, up to 250 mm tall. Inflorescence open, conspicuously (bis)anthelate. Spikelet rachilla present. *Spikes 1-4 mm long, spherical to ovoid, dark reddish brown with numerous, densely, spirally set bracts. Flowering February to March.* Moist soil along water bodies or in moist depressions. *Van Wyk* 4799.

W S C N E

Ascolepis Nees ex Steud. (s. Afr.: 2 spp.) 0454000

Clarkc. 1898. F.C. 7: 266-267.

Clarkc. 1902. F.T.A. 8: 473-478.

capensis (Kunth) Ridl.

Perennial herb, up to 400 mm tall. Spikelets 1-3 to the head, much fused together. Nut sessile. Squamellas with elongated, flattened beaks, holding nuts in hollows or pockets near their bases. *Glumes oblong, shorter than*

squamella, white or straw-coloured. Flowering November to March. Margins of streams, swamps. *Drews* 147.

W S C N E

Bolboschoenus Palla (s. Afr.: 2 spp.) 0468030

Haines & Lye. 1983. The sedges and rushes of East Africa: 52-54.

Goetghebeur & Simpson. 1991. Kew Bull. 46,1: 169-178.

maritimus (L.) Palla

(= *Schoenoplectus maritimus* (L.) Lye,

= *Scirpus maritimus* L.)

Perennial herb, up to 1.2 m high. Stems sharply triangular. Leaves flat, midrib distinct, strongly keeled below. Inflorescence a compound anthela with clusters of spikelets on very unequal branches. Perianth segments of 6 retrorsely scabrid bristles, frequently of unequal size. Edges of pools, vleis. *Codd & Dyer* 3867.

W S C N E

Bulbostylis Kunth (s. Afr.: 15 spp.) 0471010

Gordon-Gray. 1956. D.Sc. thesis, University of Natal.

boeckeleriana (Schweinf.) A.A. Beetle

Perennial herb, up to 450 mm tall. More robust than *B. contexta*. Anther crests linear. Nuts 1.1-1.8 × 0.8-1.4 mm. *Glumes with 1 well marked midvein excurrent into a minute mucro, golden brown. Flowering September to February.* Grassland, rocky slopes. *Dyer & Verdoorn* 4228.

W S C N E

burchellii (Ficalho & Hiern) C.B. Clarke

Perennial herb, up to 400 mm tall. Leaf blades filiform, well developed, forming a conspicuous feature

of plant. Inflorescence umbellate or contracted into a false head. *Glumes* light brown. *Flowering* November to May. Riverine woodland, mopani veld, rocky hillsides. *Meeuse* 9424.

W S C N E

contexta (Nees) M. Bodard

Perennial herb, up to 300 mm tall. Anther crests rounded. Nuts 0,9–2,0 × 0,7–1,3 mm. *Glumes* with 3 veins terminating slightly below apex, dark chestnut brown to chestnut-red. *Flowering* October to February. Montane grassland, shrubland and grassland. *Stalmans* 1777.

W S C N E

densa (Wall.) Hand.-Mazz.

(= *B. capillaris* (L.) C.B. Clarke var. *trifida* (Nees) C.B. Clarke)

Perennial herb, up to 150 mm tall. Spikelets 1,3–2,0 mm wide, polygonal-cylindric, never clearly 4-ranked in age. *Glumes* with margins never long ciliate, usually shortly pubescent, golden brown. *Flowering* December to April. Among rocks where it is wet. *Reid* 1015.

W S C N E

hispidula (Vahl) R. Haines

Annual herb, up to 300 mm tall. Style base usually falling together with style before nuts shed from spikelet. Nuts pyriform with apex shortly projecting. *Glumes* broadly ovate, 2,0–3,3 × 2,0–3,4 mm, deep chestnut brown or pale brown. *Flowering* October to March. Bushveld, sandveld, arid lowveld, vleis, sandy soil. *Zambatis* 397.

W S C N E

humilis (Kunth) C.B. Clarke

(= *B. breviculmis* Kunth,
= *B. striatella* C.B. Clarke)

Annual herb, up to 150 mm tall. Inflorescence a solitary spikelet or head of 2–5 sessile spikelets, no branches evident. *Glumes* green, straw-coloured or reddish, never deep chestnut red. *Flowering* January to March. Grassland, wet sandy soil. *Reid* 1181.

W S C N E

macra (Ridl.) C.B. Clarke

Perennial herb, up to 200 mm tall. Stems and leaves hairy. Leaf blades well developed, filiform. Spikelets usually solitary. *Glumes* 3,7–5,4 × 1,5–2,3 mm, lanceolate-ovate to lanceolate-oblong, golden to light chestnut brown. *Flowering* December. Grassland, vleis. *Kluge* 2221.

W S C N E

oritrepes (Ridl.) C.B. Clarke subsp. **australis** B.L. Burt

Perennial herb, up to 300 mm tall. Culm base swollen and persistent. Culms arising close together so that an absolutely characteristic linear series of swollen bases is produced. Spikelets sessile. *Glumes* dark brown. *Flowering* September to April. Mountain grassland. *Comins* 865.

W S C N E

scabricaulis Cherm.

(= *B. cardiocarpa* (Ridl.) C.B. Clarke var. *holubii* C.B. Clarke)

Perennial herb, up to 300 mm tall. Spikelets, when young, closely packed within head. Nuts 0,9–1,5 mm long, crowned by style base. *Glumes* 1,7–2,7 × 2,1–3,3 mm, dark brown. *Flowering* November. Grassland, stony hillsides. *Smook* 987.

W S C N E

schlechteri C.B. Clarke

Perennial herb, up to 200 mm tall. Leaf blades obsolete, merely apiculate continuations of sheath keels. Spikelets solitary. *Glumes* 2,9–3,7 × 1,8–2,4 mm, densely packed, brown. *Flowering* October to December. Grassland. *Reid* 428.

W S C N E

schoenoides (Kunth) C.B. Clarke

Perennial herb, up to 300 mm tall. Leaves filiform. Old leaf bases of previous year prominent. Heads with 3–5 spikelets. *Glumes* narrowly oblong, 3,4–6,7 × 1,9–3,5 mm, apex rounded to emarginate, white ciliate, bright chestnut-brown. *Flowering* October to January. Grassland. *Devenish* 1155.

W S C N E

scleropus C.B. Clarke

Perennial herb, up to 300 mm tall. Stems tufted, enclosed by harsh chestnut-black, striate leaf sheaths. Leaves often two-thirds the length of primary peduncle, narrowly linear. Spikelets 6–10, crowded in 1 head. *Glumes* reddish brown. *Flowering* September to December. Grassland, wet areas. *Kluge* 1434.

W S C N E

Carex L. (s. Afr.: 19 spp.)

0525000

Reid. 1991. M.Sc. thesis, University of the Witwatersrand.

acutiformis Ehrh.

Plants up to 0,8 m high. Caespitose with tufts connected by long rhizomes. Mature perigynia papillate, with hollow papillae, cartilaginous, conspicuously many (more than 10)-nerved. Leaves glaucous, mid-green. Inflorescence a raceme of spikes, 130–400 mm long. *Flowering* August to April. Waterlogged marshland, on dolomite-derived or clay or loam substratum. *Reid* 1367.

W S C N E

austro-africana (Kük.) Raymond

(= *C. cernua* Boott var. *austro-africana* Kük.)

Plants up to 0,6 m high, usually but not always caespitose. Stigmas 2. Mature perigynia papillate, with solid papillae. Leaves glaucous, yellow or mid-green. Inflorescence a raceme of spikes. *Flowering* from September to May. Waterlogged marshland or riparian situations. *Ellis* 2962.

W S C N E

burchelliana Boeck.
(= *C. flavescens* Burch.)

Plants up to 440 mm tall. Caespitose. Margin of perigynium rostrum scabrid. Bracts of pistillate spikelets glabrous, but ciliate distally on margin. Leaves mid-green. Inflorescence a raceme of spikes, 80–440 mm long. *Flowering October to December*. Water-logged marshland, on dolomite-derived stratum. *Reid 1115*.

W S C N E

cognata Kunth sens. lat.
(= *C. cognata* Kunth var. *drakensbergensis* (C.B. Clarke) Kük.)

Plants up to 0,76 m high. Caespitose. Perigynium evenly inflated. Rostrum 1,1–2,0 mm long; apex deeply bidentate, teeth 0,5–1,0 mm long. Leaves with conspicuous transverse venation, especially in dry material. Inflorescence a raceme of spikes, 115–195 mm long. *Flowering October to July*. Waterlogged marshland or wet flushes, or in riparian situations. *De Winter & Codd 181*.

W S C N E

glomerabilis Krecz.
(= *C. glomerata* Thunb.,
= *C. vulpina* L. var. *glomerata* (Thunb.) Wahlenb.)

Robust perennial. Leaves yellowish green. Perigynium base with layer of corky material; margin winged. Nutlet square. Inflorescence glomerate-spicate to glomerate-paniculate. *Flowering September to May*. Waterlogged marshland, on clay or loam substratum. *Reid 1153*.

W S C N E

mossii Nelmes
(= *C. petitiana* sensu C.B. Clarke non A. Rich.)

Plants up to 1,4 m high. Caespitose. Leaves usually without conspicuous transverse venation, glaucous, dark green. Rostrum short, 0,5–0,6 mm long. Inflorescence a raceme of spikes. *Flowering from August to May*. Waterlogged, or riparian situations in forest interiors. *Coetsee 1454*.

W S C N E

spicato-paniculata C.B. Clarke

Plant up to 1,4 m high. Caespitose. Bracteoles subtending higher-order inflorescence branches inflated. Mature perigynia not inflated, 4–6 conspicuous nerves on abaxial surface. Leaves dark green. Inflorescence paniculate. *Glumes brown*. *Flowering July to June*. Forest margins. *Hemm 181*.

W S C N E

zuluensis C.B. Clarke
(= *C. merxmulleri* Podlech)

Plants up to 1,2 m high. Caespitose. Bracteoles subtending higher-order inflorescence branches not inflated. Mature perigynia slightly inflated, with 2 conspicuous curved submarginal nerves on abaxial surface. Leaves yellow or dark green. Inflorescence paniculate. *Glumes brown*. *Flowering September to May*. Forest margins, on clay or loam substratum. *Reid 1173*.

W S C N E

Carpha Banks & Sol. (s. Afr.: 5 spp.) 0456000

Clarke. 1898. F.C. 7: 269–271.

Reid & Arnold. 1984. *Bothalia* 15: 139–142.

capitellata (Nees) Boeck.

Perennial herb, up to 400 mm tall. Inflorescence a panicle with 3–8 heads. Secondary bracts lanceolate, narrowed at base, not prominent. *Flowering October*. Seepage zones. *Getliffe, Hearne & Kerfoot 56 sub J*.

W S C N E

filifolia Reid & T.H. Arnold

Perennial herb, up to 0,6 m high. Plants tufted. Leaves filiform, 0,5–0,75 mm in diameter. Inflorescence axis single-noded or nodeless. Achene length 4–5 mm. *Vleis. Devenish 1821*.

W S C N E

Cladium P. Browne (s. Afr.: 1 sp.) 0489000

Dyer. 1976. Gen. 2: 887.

mariscus (L.) Pohl subsp. **jamaicense** (Crantz) Kük.

Robust, perennial herb, up to 300 mm tall. Leaves basal, up to 1,25 m long with scabrid margins and keeled. Inflorescence a panicle. Spikelets with 4–11 spirally imbricate glumes. *Glumes brown*. *Flowering October to February*. Marshy swamps, streams. *Codd 6646*.

W S C N E

Coleochloa Gilly (s. Afr.: 2 spp.) 0512000

Nelmes. 1953. Kew Bull. 1953: 373–381.

pallidior Nelmes

Perennial herb, up to 0,6 m high. Stems loosely tufted. Leaves flat to conduplicate, glabrous, 3–4 mm wide. Spikes obovoid, 5–7 mm long. Utricles 3,0–3,5 mm long. *Glumes brown*. *Flowering January to April*. Rock crevices. *Pienaar 262*.

W S C N E

setifera (Ridl.) Gilly

(= *C. rehmanniana* (C.B. Clarke) Gilly,
= *Eriospora rehmanniana* C.B. Clarke)

Perennial herb, up to 0,6 m high. Stems densely tufted, sparsely to very densely villous. Leaves convolute-cylindric, upper surface glabrous, undersurface sparsely to densely villous. Spikelets 2–3 mm long. Utricles 3–4 mm long. *Glumes brown*. *Flowering October to June*. Rock crevices. *Van Wyk & Theron 4614*.

W S C N E

Courtoisina Soják (s. Afr.: 1 sp.) 0461050

Clarke. 1902. F.T.A. 8: 403.

Maquet. 1988. Bull. Jard. bot. nat. Belg. 58: 265.

assimilis (Steud.) Maquet

Annual herb, up to 200 mm tall. Leaves as long as stem. Umbel with bracts similar to leaves, overtopping um-

bel. Spikelets 4–12 together, clustered in subglobose heads. Fruits 5–9 per spikelet, 1,5–2,3 mm long. Fertile glume shortly mucronate. *Glumes yellowish brown. Flowering February to May.* Grassland, pans, marshy swamps, vleis. *Reid 100.*

W S C N E

Cyperus L. (s. Afr.: 70 spp.) 0459000

Clarke. 1898. F.C. 7: 162–185.

Haines & Lye. 1983. The sedges and rushes of East Africa.

Lowrey & Wright. 1987. The flora of the Witwatersrand 1: 39–46.

albostratus Schrad.

Perennial herb, up to 300 mm tall. Leaves broad, 7–10 mm wide, grass-like, 3-nerved, flat. Solitary spikelets frequent in compound umbel. *Glume margin sparsely fringed with short hairs, greenish brown. Flowering January to April.* Wet forest margins, stream banks, shade in kloofs. *Hemm 118.*

W S C N E

alopecuroides Rottb.

(= *Juncellus alopecuroides* (Rottb.) C.B. Clarke)

Robust, perennial herb, up to 1,5 m high. Culms triangular. Basal leaves crowded. Inflorescence an umbel-like anthela, 100–300 mm long, 100–300 mm wide. Spikes 10–40 mm long. *Glumes with margin in lower half inrolled to reveal nutlet, pale to golden brown. Flowering June.* Pans. *Obermeyer 642.*

W S C N E

amabilis Vahl

A slender to fairly robust, annual herb, up to 250 mm tall. Largest spikelets 12–17 mm long. Stamen 1. Inflorescence an open anthela, 20–80 mm in diameter. Nutlet much shorter than subtending glume. *Glumes orange to reddish brown. Flowering January to May.* Seasonally wet habitats. *Germishuizen 310.*

W S C N E

angolensis Boeck.

Tall, stoloniferous, perennial herb, up to 0,6 m high. Stolons densely covered by brown scales. Largest leaf blade 100–300 mm long, 4–6 mm wide. Inflorescence a congested anthela with 3 or 4 leafy bracts. Anthela 15–20 mm in diameter, consisting of numerous crowded spikelets. *Glumes dirty white. Flowering October.* Dry grassland with shrubs or scattered trees. *Scheepers 507.*

W S C N E

articulatus L.

A robust, leafless, perennial herb, up to 1,6 m high. Involucral bracts scale-like, up to 15 mm long. Leaf sheaths loose, straw-coloured, purple or blackish, ending in a triangular limb. *Glumes reddish brown or straw-coloured. Flowering November to March.* Swamps, wet grasslands, pools or often in standing water. *Zambatis 1375.*

W S C N E

bellus Kunth

(= *C. remotiflorus* Kük.)

Annual herb, up to 120 mm tall. Spikes simply umbel-like (1-headed stems often occur). Spikelets digitate or clustered, rarely solitary. Leaf-bearing. Nut obovoid. *Glumes reddish brown. Flowering March to April.* Grassland, on limestone. *Van Wyk 868.*

W S C N E

compressus L.

A small to fairly robust, annual herb, up to 0,6 m high. Inflorescence a solitary head of 3–6 spikelets or a compound anthela consisting of one sessile group of spikelets and 1–10 stalked groups on 5–120 mm long peduncles. Spikelets 3–5 mm wide. *Glumes grey to maroon. Flowering January to May.* Seasonally wet habitats. *Zambatis 918.*

W S C N E

corymbosus Rottb.

Robust, perennial herb, up to 1,2 m high. Stolons scale-covered. Basal sheaths grey to brown, without or with short (50–180 mm long) leaf blades only. Inflorescence bracts leafy. *Glumes light to dark reddish brown. Flowering April.* Moist situations. *McCullum 137.*

W S C N E

cuspidatus Kunth

A slender, annual herb, up to 150 mm tall. Inflorescence a single spikelet-cluster of 4–20 spikelets. Spikelets in digitate clusters. *Glumes 1,6–2,0 mm long, reddish brown. Flowering January to April.* In shallow, seasonally wet soil, often near pools on rock outcrops. *Tinley 3055.*

W S C N E

denudatus L.f.

A tufted, perennial herb, up to 1 m high. Culms 300–1000 mm long. Leaf blades absent or up to 10 mm long. Inflorescence an open or congested anthela, 20–120 mm wide. *Glumes light to dark reddish brown. Flowering October to March.* Vleis, temporary pans, swamps. *Reid 92.*

W S C N E

dichroostachyus Hochst. ex A. Rich.

Robust, stoloniferous, perennial herb, up to 0,7 m high. Largest leaf blades 200–400 × 4–10 mm, flat. Inflorescence a small to large open anthela with 3 or 4 large, leafy bracts. Anthela with one sessile and many pedunculate inflorescences. Spikelets 2,0–4,5 × 0,7–2,0 mm. *Glumes straw-coloured to dark brown. Flowering January.* Stream banks. *Obermeyer sub TRV 29342.*

W S C N E

difformis L.

A slender to medium-sized, annual herb, up to 0,8 m high. Inflorescence a solitary, congested anthela or

with many, subumbellately arranged heads. *Glumes* 0,5–0,7 mm long with a winged keel, dark reddish brown. Flowering February to May. Seasonally wet grassland, temporary swamps and pools. Reid 785.

W S C N E

digitatus Roxb. subsp. **auricomus** (Sieber ex Spreng.) Kük.

A robust, perennial herb, up to 1,6 m high. Stems sharply triangular to winged. Spikes cylindric. Spikelets terete or angular. *Glumes* acute, golden to reddish brown. Flowering September to March. In swamps or near water. Coetzer 41.

W S C N E

distans L.f.

A tufted, perennial herb, up to 0,6 m high. Inflorescence a 30–200 mm wide anthela consisting of 1–3 sessile spikes and usually 2–10 stalked spikes or groups of spikes on 10–150 mm long peduncles. Spikelets less than 1 mm wide. *Glumes* reddish brown. Flowering November to May. In wet grassland, along stream banks, edges of pools. De Winter & Codd 585.

W S C N E

elephantinus (C.B. Clarke) C.B. Clarke ex Kük.

Perennial herb, up to 3 m high. Stem obtusely trigonous. Spikelets innumerable, rather loosely spicate, 10-nutted. *Glumes* yellowish brown to dark brown. Flowering May. Edges of dams, shallow water, heavy water-logged soil. Scheepers 1250.

W S C N E

eragrostis Lam.*

(= *C. vegetus* Willd.)

Perennial herb, up to 0,6 m high. Stamen 1. *Glumes* with a longitudinal, green central zone and a broad band of more delicate semitransparent, green. Flowering November to March. Wet places, vleis. Native to America. Bredenkamp 13.

W S C N E

esculentus L.

A fairly robust, stoloniferous, perennial herb, up to 0,7 m high. Stolons covered with scales and ending in tubers. Spikelets brown or rust-coloured, obtuse. *Glumes* 2,2–2,6 mm long, with raised nerves almost to margin, reddish brown with an uncoloured marginal border. Flowering November to April. Seasonally wet grasslands and swamps. Germishuizen 2885.

W S C N E

fastigiatus Rottb.

A robust, waterside, perennial herb, up to 1,2 m high. Wings of rachilla golden brown, spirally twisted, persistent for a short while after glumes and fruit has fallen. Spikelets often suberect. *Glumes* reddish brown. Flowering October to March. Along streams and rivers. Reid 753.

W S C N E

fulgens C.B. Clarke var. **fulgens**

Perennial herb, up to 0,7 m high. Spikes 19–60 × 20–45 mm, mostly simple but occasionally with 1 or 2 branches from base. Spikelets 7,7–26,0 × 0,8–3,3 mm, laxly arranged. *Glumes* spaced 1,2–2,0 mm apart, golden brown to copper-coloured. Flowering December to February. Disturbed areas. De Winter & Codd 244.

W S C N E

fulgens C.B. Clarke var. **contractus** Kük.

Bulbous herb, up to 150 mm tall. Spikelets 10–25 mm long, 1,5–2,0 mm broad. Inflorescence contracted into a dense head of 4–6 suberect spikelets up to 150 mm. Leaves usually shorter than culm. *Glumes* golden yellow to reddish brown; January. Edge of salt pan. Mogg 24402.

W S C N E

haematocephalus Boeck. ex C.B. Clarke

Medium-sized, annual herb, up to 400 mm tall. Umbel with densely agglomerated spikelets. *Glumes* with a strongly recurved awn at apex, brown. Flowering November to February. Vleis. Acocks 11244.

W S C N E

imbricatus Retz.

(= *C. radiatus* Vahl)

A fairly robust, perennial herb with a short, woody rhizome, up to 1,2 m high. Leaves few, 200–400 × 40–80 mm. Leaf sheaths light brown and purple. Inflorescence an anthela consisting of a few sessile spikes and spikes on peduncles. Involucral bracts leafy. *Glumes* light brown to golden. Flowering August and May. River banks. Van der Schijff 3168.

W S C N E

immensus C.B. Clarke

Tufted, perennial herb, up to 2 m high. *C. immensus* is closely related to *C. dives* and is included under that species by Haines & Lye.

iria L.

Annual herb, up to 0,6 m high. Inflorescence an open anthela, 15–200 × 10–200 mm, with groups of spikes sessile or on long peduncles. *Glumes* with an uncoloured margin and a greenish, slightly excurrent midrib, golden brown. Flowering January to April. Seasonally wet habitats such as temporary pools and swamps. Theron 2972.

W S C N E

laevigatus L.

(= *Juncellus laevigatus* (L.) C.B. Clarke)

A tufted, perennial herb, up to 0,6 m high. Culms crowded or solitary on a long, creeping rhizome. Inflorescence a solitary spikelet or a loose to crowded head of spikelets, lateral. *Glumes* pale yellowish grey. Flowering January to April. Stream and river banks, moist soil around springs, pans, dams. Germishuizen 2876.

W S C N E

latifolius Poir.

A robust, perennial herb, up to 1,6 m high. Largest leaf blades 0,6–2,0 m long and 10–30 mm wide. Anthela with numerous distinct spikes. *Glumes* straw-coloured to light or dark reddish brown and a distinct uncoloured marginal border. Flowering October to April. Wet, swampy soil, roadside ditches, along streams. Codd 6928.

W	S	C	N	E
---	---	---	---	---

leptocladus Kunth

(= *C. prasinus* Kunth,
= *C. smithii* McClean)

Perennial herb, up to 1 m high. Leaf blades 3,5–5,5 mm wide, shallowly V-shaped or corrugate in cross-section. Three main veins not white in dry material. *Glumes* glabrous on edges, light brown. Flowering August to January. Sheltered places on rocky hillsides. Repton 1580.

W	S	C	N	E
---	---	---	---	---

longus L. sens. lat.

A fairly robust, polymorphic, perennial herb, up to 0,9 m high. Stolons stout, not ending in tubers. Culm base not much swollen. *Glumes* reddish brown with a narrow, uncoloured margin. Flowering November to March. Grassland, vleis. Reid 102.

W	S	C	N	E
---	---	---	---	---

maculatus Boeck.

A slender to robust, perennial herb, up to 0,7 m high. Spikelets densely flowered, 8–40 × 1,0–1,5 mm. linear-lanceolate with an acute tip, straight or curved. *Glumes* 2,2–3,0 mm long, reddish brown with a wide, uncoloured marginal border. Flowering March. In sandy habitats near rivers and also in rock crevices. Arnold 367.

W	S	C	N	E
---	---	---	---	---

margaritaceus Vahl

A robust, perennial herb, up to 0,7 m high. Inflorescence of 2–8 slightly flattened spikelets. Nutlets 2,2–2,8 mm long and 1,7–2,0 mm broad. *Glumes* whitish, pale yellow or light reddish brown. Flowering November to March. Open woodland or grassland. Retief 1583.

W	S	C	N	E
---	---	---	---	---

marginatus Thunb.

A fairly robust, tussocky, perennial herb, up to 0,8 m high. Leaf blades absent at least on some culms. Leaf sheaths straw-coloured or brown, very wide and prominent. *Glumes* whitish but often with reddish brown below. Flowering October to April. In temporarily wet habitats. Smook 6251.

W	S	C	N	E
---	---	---	---	---

nervoso-striatus Turill

Perennial, glabrous herb, up to 0,6 m high. Leaves all basally imperfect, up to 6 mm wide. Inflorescence 100 mm in diameter. Spikes sessile or with floppy pedun-

cles to 60 mm long. Bracts 4. *Glumes* broadly elliptic, 2,75 × 2,00 mm, apex rounded, longitudinally veined-striate, keeled, golden brown. Flowering January to March. Grassland. Burt Davy 9237.

W	S	C	N	E
---	---	---	---	---

obtusiflorus Vahl var. **obtusiflorus**

(= *C. compactus* Lam.)

Perennial herb, up to 500 mm tall. Inflorescence a tight head of quite numerous spikelets. Spikelets 7–10 mm long, ovate. *Glumes* white. Flowering September to March. Grassland, bushveld, rocky slopes, shallow soil over rocks. De Winter & Codd 508.

W	S	C	N	E
---	---	---	---	---

obtusiflorus Vahl var. **sphaerocephalus** (Vahl) Kük.

(= *C. sphaerocephalus* Vahl)

Perennial herb, up to 500 mm tall. Inflorescence a tight head of quite numerous spikelets. Spikelets 7–10 mm long. *Glumes* yellow. Flowering October to March. Stony grassland. Germishuizen 878.

W	S	C	N	E
---	---	---	---	---

papyrus L.

A robust, perennial herb, up to 5 m high. Culms 2–5 m long, obtusely triangular. Involucral bracts light brown. Leaf blades absent. Inflorescence a compound umbel-like anthela. *Glumes* light to golden brown. Flowering October to January. Swamps, edges of dams, sometimes forming a dense impenetrable floating mass. Jacobsen 5404.

W	S	C	N	E
---	---	---	---	---

procerus Rottb.

A fairly robust, perennial herb, up to 0,9 m high. Stolons covered by distantly spaced, blackish scales. Inflorescence a lax or somewhat congested anthela. Axis of spike hairy. *Glumes* dark brown. Flowering February to March. Seasonally wet grassland, swamps. Reid 76.

W	S	C	N	E
---	---	---	---	---

pseudoleptocladus Kük.

A fairly robust, perennial herb, up to 0,6 m high. Inflorescence not proliferating, an open anthela, 50–150 mm wide. Spikelets, 1–2 mm wide. *Glumes* reddish brown. Flowering September to March. Open parts of forest and woodland. Onderstall 1404.

W	S	C	N	E
---	---	---	---	---

pygmaeus Rottb.

Annual herb, up to 150 mm tall. Stems crowded. Leaf blades 10–60 mm long, 1–2 mm wide, flat, but often folded and twisted when dry. Sheaths reddish to purple. Inflorescence a congested anthela. Each spike with many crowded spikelets. *Glumes* green. Flowering September. Edges of pans. Pienaar 4481.

W	S	C	N	E
---	---	---	---	---

rigidifolius Steud.

A slender to fairly robust, perennial herb, up to 500 mm tall. Plant with slender stolons. Inflorescence bracts leafy, erect or spreading. *Glumes* 2,5–3,0 mm long, dark reddish brown to black with a green midrib. Flowering December to March. Grassland, often near roads and cultivations. Smook 4890.

W S C N E

rotundus L. subsp. rotundus var. rotundus

A medium-sized, perennial herb, up to 0,8 m. Stolons ending in small tubers persisting as hard, swollen bases of stems. *Glumes* 3,4–4,3 mm long, light to dark reddish brown. Flowering December to April. Seasonally wet grassland, swamps, waste places. Onderstall 318.

W S C N E

rubicundus Vahl

(= *C. teneriffae* Poir.)

A tussocky, annual herb, up to 250 mm tall. Culm base succulent. Inflorescence a congested anthela with sessile spikelets only. Spikelets 4–15 mm long. Nutlet 0,9–1,1 mm long. *Glumes* 2,5–4,0 mm long, light brown. Flowering December to March. Seasonally wet habitats, often on shallow soil over rocks or near temporary pools and swamps. Comins 921A.

W S C N E

rupestris Kunth var. rupestris

Perennial herb, up to 200 mm tall. Style divided at apex into 3 long stigmas. Old leaf sheaths greyish fawn, somewhat papery. Spikelets 2–9 in one head, compressed. *Glumes* chestnut-brown or dark red. Flowering November to March. Montane grassland, soil pockets on rock. Van Jaarsveld 108.

W S C N E

rupestris Kunth var. parvinux (C.B. Clarke) Kük.

(= *C. parvinux* C.B. Clarke)

Perennial herb, up to 60 mm tall. Spikelets narrower than those of var. *rupestris*. Nut very small. *Glumes* chestnut-brown with a green midrib and apicules. Flowering January to May. Montane grassland. Vorster & Coetzer 2078.

W S C N E

schinzii Boeck.

(= *C. holostigma* Schweinf.)

Annual herb, up to 130 mm tall. Style subentire or minutely 2- or 3-toothed at tip. Stems clustered. Head 1, or 3–6 subdigitate spikelets. *Glumes* reddish brown. Flowering January to February. Grassland, thin layer of soil. Repton 1708.

W S C N E

schlechteri C.B. Clarke

Perennial herb, up to 220 mm tall. Leaves short, 3 mm wide. Inflorescence 10–12 mm in diameter. Bracts 3 or 4, 30–50 mm long. Spikelets 6–10. *Glumes* imbricate,

dark brown. Flowering November to January. Grassland, seepage areas. Stalmans 1814.

W S C N E

semitrifidus Schrad. var. semitridus

Perennial herb, up to 350 mm tall. Style undivided or divided into 2 or 3 short stigmas. Old leaf sheaths brown and quite hard. *Glumes* reddish brown. Flowering October to March. Grassland, rocky slopes. Smith 1153.

W S C N E

sexangularis Nees

A robust, perennial herb, up to 1,5 m high. Basal leaves lacking. Many involucre bracts overtopping inflorescence. *Glumes* brown. Flowering September to December. Swamps, wet grassland, stream banks, also cultivated as a garden plant. Codd & Dyer 4666.

W S C N E

sphaerospermus Schrad.

(= *C. denudatus* L.f. var. *sphaerospermus* Schrad.)

Perennial herb, up to 0,6 m high. Angles of stem not winged. Leaf blades well developed. Usually at least 2 inflorescence bracts equal to or longer than inflorescence branches. *Glumes* (1,5–)2,0(–2,5) mm long, brown. Flowering December to March. Bushveld, grassland, margins of vleis, pans. Acocks 23565.

W S C N E

tenax Boeck.

A densely tufted, perennial herb, up to 0,6 m high. Culm base with numerous, crowded stiff leaves and usually also many persistent dead leaves. Inflorescence of 1 sessile spikelet cluster and 3–12 stalked head-like clusters. *Glumes* brownish black. Flowering October to January. Dry and sandy grassland. Bredenkamp 1915.

W S C N E

tenuispica Steud.

Annual herb, up to 200 mm tall. Inflorescence an open anthela 30–100 mm in diameter with one sessile and several stalked groups of digitately arranged spikelets. *Glumes* greenish brown. Flowering February to May. Grassland, shallow seepage water. Oliver 7110.

W S C N E

thorncroftii McClean

Perennial herb, up to 230 mm tall. Leaves glabrous, margin infolded. Inflorescence an umbel with 6–35 sessile spikelets, 10–25 × 3 mm. *Glumes* 50 per spike, imbricate, reddish brown. Flowering December to March. Grassland, rocky hillsides. Zambatis 1633.

W S C N E

usitatus Burch. var. usitatus

Perennial herb, up to 300 mm tall. Bulbs 6–14 mm wide. Inflorescence usually a single fan-shaped spike.

Spikelets on average 11,2 × 2,4 mm, densely arranged. *Glumes densely and compactly imbricate, dark purple brown. Flowering December to March. Bushveld, on rock slabs. Vorster 2516.*

W S C N E

zollingeri Steud.

(= *C. sphacelatus* Rottb. var. *tenuior* C.B. Clarke)

A tussocky, annual herb, up to 500 mm tall. Inflorescence of 1 sessile and 2–10 stalked spikelet clusters. *Glumes 3–4 mm long, light brown. Flowering January to February. Seasonally wet habitats. Van Rooyen 3165.*

W S C N E

Eleocharis R. Br. (s. Afr.: 17 spp.) 0469010

Reid. 1993. Pers. comm.

acutangula (Roxb.) Schult.

(= *E. fistulosa* Link)

Perennial herb, up to 0,7 m high. Stems 3-angled, twisted. *Spikelets ± 30 mm long, greenish. Flowering January to April. In water of pans. Meeuse 10531.*

W S C N E

atropurpurea (Retz.) Link

Annual herb, up to 50 (occasionally 150) mm tall. Stems filiform. *Spikelets ± 2 mm long, blackish. Flowering January to May. Nutlet minute, bristles absent or very short. In water and on margins of pans. Meeuse 10511.*

W S C N E

dregeana Steud.

Perennial herb, up to 400 mm tall. Tufts from a thick horizontal rhizome. Stems rounded. *Spikelets up to 15 mm long, blackish. Bristles present. Stigmas 2. Hybridises with E. palustris. Flowering December to March. Margins of marshes. Louw 1535.*

W S C N E

intricata Kük.

Perennial herb, up to 120 mm. *Spikelets up to 5 mm long, reddish. Nutlet very small, bristles longer than nutlet. Flowering November to February. Marshland. Kluge 2407.*

W S C N E

limosa (Schrad.) Schult.

Perennial herb, up to 400 mm tall. Stems rounded. *Spikelets up to 30 mm long, straw-coloured, variegated red. Flowering December to February. Margins of marshes. Mauve 4283.*

W S C N E

palustris R. Br.

Perennial herb, up to 450 mm tall. Tufts from thick horizontal rhizomes. Stems rounded. *Spikelets up to 15 mm long, blackish. Bristles present. Stigmas 3. Hybrid-*

ises with E. dregeana. Flowering October to March. Margins of marshes. Mogg 16789.

W S C N E

Ficinia Schrad. (s. Afr.: 73 spp.) 0465000

Reid. Pers. comm.

angustifolia (Schrad.) Levyns

(= *F. longifolia* C.B. Clarke)

Prostrate, perennial herb. Stems more or less filiform, much branched. *Spikelets single, ± 20 mm long, straw-coloured to blackish. Glumes distichous. Moist forest floors. Davidson & Mogg 32885.*

W S C N E

gracilis (Poir.) Schrad.

Perennial herb, up to 500 mm tall. Plants tufted. Leaves more or less flat. *Spikelets many per head, blackish. Gynophore small, truncate. Nutlet smooth. Flowering October to March. Van der Schijff 4892.*

W S C N E

stolonifera Boeck.

Perennial herb, up to 400 mm tall. Plants tufted. Stems and leaves filiform. Ligule conspicuous, papery, white to straw-coloured. *Spikelets few per head, blackish. Gynophore large, 3-lobed. Flowering October to March. Grassland. Killick & Strey 2382.*

W S C N E

undosa B.L. Burt

Perennial herb, up to 400 mm tall. Plants tufted. Leaves inrolled. *Spikelets many per head, blackish. Gynophore minute. Nutlet in transverse section lineolate. Flowering January to February. Rocky grassland. Reid 856.*

W S C N E

Fimbristylis Vahl (s. Afr.: 9 spp.) 0471000

Gordon-Gray. 1956. D.Sc. thesis, University of Natal.

bisumbellata (Forssk.) Bub.

(= *Scirpus bisumbellatus* Forssk.)

Annual herb, up to 300 mm tall. Biconvex nuts and 2-branched styles predominating within spikelet. Leaves eligulate, blades pilose to glabrescent near base, hairs sometimes dense, but never aggregated into a ligule. *Glumes light brown. Flowering January to August. Marshes, margins of rivers and hot-springs. Grobler 86.*

W S C N E

complanata (Retz.) Link

(= *Scirpus complanatus* Retz.)

Perennial herb, up to 500 mm tall. Style, including style base, but excluding style branches, exceeding 1,3 mm in length. Leaves ligulate. Rhizome well developed, usually clearly sympodial, of closely packed shoot bases confluent in a uniseriate row, occasionally ir-

regularly forming a tuft. *Glumes brown. Flowering October to April. Marsh to moist grassland. Smook 1012.*

W S C N E

dichotoma (L.) Vahl

(= *F. diphylla* (Retz.) Vahl)

Perennial herb, up to 1 m high. Leaf sheaths with blades usually well developed. Nut surface longitudinally striate and trabeculate under a magnification exceeding $\times 15$. *Glumes with upper half of abaxial surface glabrous, brown. Flowering November to May. Marsh or riverine areas (often a weed of damp, disturbed situations). Reid 482.*

W S C N E

ferruginea (L.) Vahl

(= *Scirpus ferrugineus* L.)

Annual herb, up to 300 mm tall. Style between style base and style branches, ribbon-like. Nut surface closely reticulate under a magnification exceeding $\times 15$. *Glumes with upper half of abaxial surface grey pubescent, brown. Flowering December to June. Damp sand or sandy clay. Bredenkamp & Van Vuuren 259.*

W S C N E

microcarya F. Muell.

Annual herb, up to 400 mm tall. Leaf sheaths not spongy, markedly compressed at mouth. Ligule a line of densely packed, fine, white hairs. Blades not reduced to minute apiculi. *Glumes brown. Flowering March. Damp sandy areas, earth pockets among rocks. Van Wyk 4790.*

W S C N E

squarrosa Vahl

Annual herb, up to 150 mm tall. Style base bearing many long, white, pendant hairs which form a fringe over nut. *Glumes light brown. Flowering October to January. Marshes, margins of rivers and hot-springs. Jacobsen 2599.*

W S C N E

Fuirena Rottb. (s. Afr.: 15 spp.) 0467000

Clarke. 1898. F.C. 7: 260–265.

Forbes. 1969. JI S. Afr. Bot. 35, 2: 83–98.

ciliaris (L.) Roxb. sens. lat.

Perennial herb, up to 400 mm tall. Stamens 3. Spikelets 2.0–3.2 mm wide. Nutlets (0.7–)0.8–1.1(–1.3) mm long. *Glumes awned. Awns with long bristles. Glumes green. Flowering February to March. Margins of pans and streams. Van der Schijff 2860.*

W S C N E

coerulescens Steud.

(= *F. reticulata* Kük.)

Perennial herb, up to 500 mm tall. Petals as long as nut, clawed, pinnatifid. Epidermal cells of pericarp large (visible with $10\times$ lens) with deeply and closely rippled

anticlinal walls. *Glumes reddish green. Marshy pools. Van der Schijff 2042.*

W S C N E

hirsuta (P.J. Bergius) P.L. Forbes

(= *F. glabra* Kunth,

= *F. hirta* Vahl)

Perennial herb. Claws of inner hypogynous scales hairy. Scales not crested. Rhizome well developed. Leaf blades with midrib. Culms smooth. *Glumes reddish green. Flowering October. Kloofs. Wager sub TRV 22454.*

W S C N E

leptostachya Oliv. var. **leptostachya**

Annual herb, up to 300 mm tall. Hairs of glumes short with a few to numerous much longer stiff bristles also present. Stamens 2. Spikelets 1.3–2.3 mm wide. Nutlets 0.4–0.9 mm long. Hypogynous bristles present. *Glumes dark green. Flowering May. Sloping hillsides with much seepage water. Forbes 648.*

W S C N E

leptostachya Oliv. var. **nudiflora** C.B. Clarke

Annual herb, up to 150 mm tall. Hypogynous bristles absent. Stamens 2. Spikelets 1.3–2.3 mm wide. Nutlets 0.4–0.9 mm long. *Glumes dark green. Flowering February to April. Vleis. Theron 2693.*

W S C N E

obcordata P.L. Forbes

Perennial herb, up to 1.4 m high. Inflorescence a terminal cluster of 1–5(–8) sessile, subsessile and pedunculate heads of spikelets. Glumes pubescent. Inner hypogynous whorl comprising 3 substipitate, aristate scales, alternating with stamens. *Flowering February. Stream banks. Van der Schijff 358.*

W S C N E

pachyrrhiza Ridl. var. **pachyrrhiza**

Perennial herb, up to 1 m high. Rhizome stout. Plants with indumentum of short patent hairs, 0.1–0.2 mm long on all parts except towards base where glabrescent. *Glumes dull green. Flowering January to March. Waterlogged soil, edges of pools. Van der Schijff 1906.*

W S C N E

pubescens (Poir.) Kunth

Perennial herb, up to 0.6 m high. Plant hairy. Inner hypogynous whorl sometimes absent, usually reduced to small outgrowths of receptacle, rarely larger. Nutlet 1.0–1.6(–1.8) mm long. *Glumes greenish brown. Flowering September to March. Margins of streams, vleis, edges of pools in black turf. Codd 3760.*

W S C N E

stricta Steud.

(= *F. chlorocarpa* Ridl.)

Perennial herb, up to 500 mm tall. Inner hypogynous whorl consisting of 3 bristles. Awns of glumes

0.2–0.6(–1.0) mm long. Rhizome usually absent, rarely poorly developed. *Glumes* dull green. *Flowering* January to June. Waterlogged soil, along streams and rivers, vleis. *Forbes* 395.

W S C N E

Isolepis R. Br. (s. Afr.: 27 spp.)

0468020

Clarke. 1898. F.C. 7: 211–234.

Levyns. 1944. JI S. Afr. Bot. 10: 29–32.

Reid. 1992. Pers. comm.

cernua (Vahl) Roem. & Schult.

(= *Scirpus cernuus* Vahl)

Annual herb, up to 150 mm tall. Spikelets 1 or 2 per inflorescence. Bract overtopping inflorescence. Nut ovate or obovate, not beaked, surface punctulate (or smooth). *Glumes* boat-shaped, whitish, conspicuously green-keeled. *Flowering* November to March. River banks, damp sites in grassland. *Reid* 1094.

W S C N E

costata (Boeck.) A. Rich. var. **costata**

(= *Scirpus costatus* Boeck.)

Tufted, annual herb, up to 500 mm tall. Basal leaf sheaths truncate, otherwise plants leafless. Inflorescence composed of (1–)many spikelets. Nut white, surface costate. *Glumes* ovate, obtuse, green-keeled, ferruginous with a pale membranous margin. *Flowering* September to January. Swamps, stream banks, vleis. *Reid* 820.

W S C N E

costata (Boeck.) A. Rich. var. **macra** (Boeck.) B.L. Burt

(= *Scirpus costatus* Boeck. var. *macer* (Boeck.) Cherm.,

= *Scirpus macer* Boeck.)

Annual herb, up to 300 mm tall. Stems slender, each bearing a head of 1–12 spikelets. Leaves absent. Nut ellipsoid, ribbed. *Glumes* dull brown. *Flowering* September to February. Swamps. *Balsinhas* 2777.

W S C N E

fluitans (L.) R. Br.

(= *Scirpus fluitans* L.)

Annual herb, up to 350 mm tall. Stem with leaf-bearing nodes. Spikelets solitary, lanceolate, ± 5 mm long. Nut lenticular, dark brown, shortly beaked, surface punctulate. *Glumes* ovate, obtuse, straw-coloured or purplish brown. *Flowering* July to June. Moist wetlands and swamps, in streams. *Kluge* 2107.

W S C N E

natans (Thunb.) Dietr.

Annual herb, up to 150 mm tall. Stems thick, flaccid. Spikelets ovate, up to 3 mm long. Bract long, overtopping inflorescence. Inflorescence often proliferous. Nut ellipsoid, beaked. *Glumes* straw-coloured. *Flowering* January. Vleis. *Vorster* 268.

W S C N E

sepulcralis Steud.

(= *Scirpus griquensium* C.B. Clarke,

= *Scirpus chlorostachyus* Levyns)

Aquatic annual herb, up to 100 mm tall. Spikelets 2 or 3 per inflorescence. Bract shorter than or equalling inflorescence. Nut beaked, ellipsoid, blackish. *Glumes* with apex shortly recurved, keel narrow, brown. *Flowering* October to December. Streams, river banks. *Venter* 1069.

W S C N E

setacea (L.) R. Br.

(= *Scirpus setaceus* L.)

Annual herb, up to 150 mm tall. Leaves present. Inflorescence composed of 1–3 spikelets. Spikelets ± 2 mm long. Style branches 3. Nut brown, longitudinally ribbed. *Glumes* obovate, obtuse, green-keeled, straw-coloured or light brown. *Flowering* October to November. Riversides. *Theron* 893.

W S C N E

sororia Kunth

(= *Scirpus sororius* (Kunth) C.B. Clarke)

Annual herb, up to 30 mm tall. Leaves present. Inflorescence composed of 1–3 spikelets. Spikelets ± 3 mm long. *Glumes* boat-shaped, broadly green-keeled, minutely apiculate, straw-coloured. *Flowering* August. Vleis. *Van Wyk* 549.

W S C N E

Kyllinga Rottb. (s. Afr.: 14 spp.)

0462000

Getliffe Norris. 1982. JI S. Afr. Bot. 49: 261–304.

alata Nees

Perennial herb, up to 300 mm tall. Inflorescence a single, ovate to globose spike. Spikelets usually markedly winged. Keels green, excurrent into long, slender mucros. *Glumes* golden green. *Flowering* October to February. Grassland. *Leendertz* 2930.

W S C N E

alba Nees

Perennial herb, up to 500 mm tall. Leaves and culms glabrous or minutely scabrid. Bracts usually 3. Lower fertile glume apex blunt or scarcely excurrent into a mucro. *Glumes* white or cinnamon. *Flowering* October to January. Grassland, sandy soil. *Pienaar* 260.

W S C N E

erecta Schumach.

Perennial herb, up to 250 mm tall. Rhizome a row of bulbous-based, contiguous stems clothed in scales (when dry, stem bases shrunken within scales). Inflorescence a single, globose spike. *Glumes* golden or green. *Flowering* November to April. Marshy grassland. *Louw* 1140.

W S C N E

intricata Cherm.

(= *K. erecta* Schumach. var. *intricata* C.B. Clarke)

Perennial herb, up to 200 mm tall. Rhizome 1–2 mm in diameter with loose, red-brown, overlapping scales. Inflorescence 1 globose to ovate head. Bracts 3, short, lowest erect and later reflexed. *Glumes golden green. Flowering December.* Vleis. Kies 374.

W S C N E

melanosperma Nees

Perennial herb, up to 1 m high. Inflorescence 1, usually cylindric but subglobose and rust streaked under unfavourable conditions, subtended by 3 stiff, erect bracts reflexing to 45 degrees with stem later. *Glumes yellowish green. Flowering October to March.* Edges of streams, vleis. Van der Schijff 3382.

W S C N E

odorata Vahl

(= *K. cylindrica* Nees)

Perennial herb, up to 0,54 m high. Central spike 8–16 mm long. Keel of glume wingless, glabrous or with 1 or 2 hairs. Anthers 2 per floret. Nut broadly obovoid, yellow when young, turning reddish brown and later black. *Glumes white. Flowering December to February.* Montane grassland. Van der Schijff 4946.

W S C N E

pauciflora Ridl.

Rhizomatous, perennial herb, up to 0,6 m high. Inflorescence lax, of 15–20 spikelets, or fewer, some replaced by a vegetative shoot. *Glumes golden green. Flowering November to December.* Vleis, usually in very moist soil, or running water. Devenish 1200.

W S C N E

pulchella Kunth

Perennial herb, up to 450 mm tall. Stolons very slender. Inflorescence of 1–3, sessile, cylindrical spikes. Nut ellipsoid to obovoid, half the length of glume, chestnut-brown. *Glumes dark red. Flowering December to April.* Sides of pans, edges of dams, vleis. Germishuizen 2874.

W S C N E

Lipocarpa R. Br. (s. Afr.: 6 spp.) 0452000

Clarke. 1898. F.C. 7: 265–266.

Hooper. 1972. F.W.T.A. 3,2. 327.

chinensis (Osbeck) J. Kern

(= *L. argentea* (Vahl) R. Br.,
= *L. senegalensis* (Lam.) T. & H. Durand)

Densely tufted perennial up to 400 mm tall. Spikelets pale even when mature. *Glumes discrete, 5–16 per head, with a short, blunt, triangular tip, dull white, sometimes dark towards base. Flowering August to May.* Along streams, vleis. Acocks 21953.

W S C N E

micrantha (Vahl) Tucker

(= *Hemicarpha micrantha* (Vahl) Pax)

Small, tufted, annual herb, up to 200 mm tall. Leaves filiform. Inflorescence falsely lateral by continuation of culm into upright, subtending bract, 3 spikelets together. *Glumes obovate, brown. Flowering April to May.* Lowveld, damp, sandy soil. Oliver 7112.

W S C N E

nana (A. Rich.) Cherm.

(= *L. pulcherrima* Ridl.)

Annual herb, up to 300 mm tall. Rhachilla of spikelet 0,50–0,75 mm broad. Spikelets dark or becoming so at maturity. *Glumes red, brown or black, sometimes with pale tips. Flowering January to May.* Marshy grassland. Mohle 518.

W S C N E

rehmannii (Ridl.) Goetgh.

(= *Riklrella rehmannii* (Ridl.) J. Raynal,
= *Scirpus hystericoides* B. Nord.)

Dwarf, tufted annual herb, up to 200 mm tall. Inflorescence capitate, terminal or pseudolateral, comprising 1–20 distinct spikes. Spikelets 1-flowered. *Glumes green. Flowering December to April.* Vlei edges, seepage areas. Meeuse 10507.

W S C N E

Mariscus Gaertn. (s. Afr.: 31 spp.) 0459030

Vorster. 1978. D.Sc. thesis, University of Pretoria.

albomarginatus C.B. Clarke

Small, tuft-forming, perennial herb, up to 480 mm tall. Spikelets lanceolate, acute, mostly 1-flowered. Fruits more than three times as long as broad. *Glumes straw-coloured to russet-brown. Flowering November to April.* Open bushveld or sparse grassland. Vorster 2212.

W S C N E

capensis (Steud.) Schrad.

Small, tufted, perennial herb, up to 0,6 m high. Inflorescence multifid, capitate with 1-flowered spikelets. Spikelets not conspicuously pointed. Anthers 0,7–1,4 mm long. *Glumes 3,1–4,2 mm long, straw-coloured. Flowering December to March.* Short grassland. Vorster 2505.

W S C N E

chersinus N.E. Br.

(= *M. bullatus* (Kük.) Podlech)

Perennial herb, up to 0,65 m high. Spikes of inflorescence 7–11, each 17–25 mm long. Fruits, 1,6–2,0 × 0,8–1,2 mm, ellipsoid to obovoid in outline, trigonous, surface covered with flat-topped papillae. *Glumes straw-coloured or very light russet-brown. Flowering January to February.* Open savanna on deep and loose sand. Vorster 2666.

W S C N E

congestus (Vahl) C.B. Clarke

Perennial herb, up to 0,9 m high. Hygrophyte. Spikelets very densely crowded, very narrowly ovate

to ovate-lanceolate in outline, laterally conspicuously compressed. *Glumes* straw-coloured. *Flowering November to March*. Grassland, open savanna, along stream banks and in locally wet locations. *Vorster* 2838.

W S C N E

cylindristachyus Steud.

Perennial herb, up to 0,6 m high. Inflorescence a terminal simple umbel of 8–15 rays. Rhachilla of spikelet broadly winged with translucent decurrent margins. *Glumes* yellowish green. *Flowering March*. Open places. *Koker* 11.

W S C N E

cyperoides (Roxb.) A. Dietr. subsp. **africanus** (C.B. Clarke ex Kük.) Podlech

Annual herb, up to 500 mm tall. Plant forming small tufts. Basal leaves longer than inflorescence. Umbel with bracts overtopping umbel. Spikelets densely packed. Fruits 1 per spikelet, 2,2–3,4 mm long. Fertile glume recurved-mucronate. Pans, edges of pools, vleimagins, edges of streams. *Vorster* 2851.

W S C N E

deciduus C.B. Clarke

Tufted, medium-sized herb, up to 300 mm tall. Hygrophyte with horizontal rhizomes. Umbel consisting of apparently palmate, greenish spikes of a few spikelets each. *Glumes* light olive-green. *Flowering October to March*. Along streams in open grassland, vleis. *Reid* 842.

W S C N E

dregeanus Kunth

Tufted, perennial herb, up to 0,58 m high. Inflorescence a terminal, pyramidal head-like structure. Spikelets green in life, changing to straw-coloured when dried, multi-flowered. *Glumes* light green. *Flowering November to February*. Short grassland, often on deep, loose sand. *Smook* 2632.

W S C N E

dubius (Rottb.) Kük. ex G.E.C. Fisch.

Perennial herb, up to 370 mm tall. Basal leaf sheaths membranous. Inflorescence a single, usually unbranched, bullet-shaped, head-like spike consisting of densely spaced glumes, 6–10-flowered. *Glumes* white. *Flowering November to April*. Short grassland or on cultivated lawns. *Vorster* 2667.

W S C N E

indecorus (Kunth) Podlech
(= *Cyperus indecorus* Kunth)

Perennial herb, up to 380 mm tall. Spikelets laxly spaced at right angles to axis of spike. *Glumes* 3,6–5,1 mm long, apices not recurved, purple-brown. *Flowering November to January*. Low, open bushveld on bare patches. *Wilms sub TRV* 6385.

W S C N E

keniensis (Kük.) Hooper

Perennial herb, up to 0,75 m high. Base 9–11 mm in diameter, globular, hard, sheath in purplish leaf bases. Spikelets laxly arranged, linear, laterally inconspicuously compressed. *Glumes* purplish red. *Flowering November to March*. Generally associated with plantations. *Vorster* 2674.

W S C N E

laxiflorus Turrill

Perennial xerophyte, up to 0,8 m high. Spikelets 5- to 10-flowered, very laxly arranged, spreading, lanceolate to very narrowly ovate in outline. *Glumes* 2,6–3,9 mm long, rather laxly arranged, not imbricate at maturity but spreading from rhachilla at an angle of 45 degrees, dull straw-coloured. *Flowering December to February*. Dry, tall, open woodland in partial shade. *Vorster* 2655.

W S C N E

macr Kunth subsp. **macr**

Perennial herb, up to 380 mm tall. Umbel usually more or less contracted, consisting of 5–9 rays. Spikelets 1- or occasionally 2-flowered. Fruits 1,8–2,0 mm long, 0,8–0,9 mm wide. *Glumes* yellowish green. *Flowering January to April*. Short grassland. *Onderstall* 325.

W S C N E

marlothii (Boeck.) C.B. Clarke
(= *Cyperus marlothii* Boeck.)

Perennial herb, up to 240 mm tall. Base a pseudobulb. Basal leaves about as long as primary peduncle. Inflorescence a terminal umbel of 3–7 rays. Fruits obovate, 1,4–2,2 × as long as wide. *Glumes* pale straw-coloured in dried specimens. *Flowering January to March*. Edges of pans. *Theron* 543.

W S C N E

owanii (Boeck.) C.B. Clarke

Tall, tufted, perennial herb, up to 1 m high. Inflorescence a terminal, compound umbel of 7–11 primary rays. Spikes consisting of loosely arranged spikelets. *Glumes* reddish brown. *Flowering November to February*. Hilly or mountainous areas in relict patches of mistbelt forest, usually in glades along streams. *Ellis* 2959.

W S C N E

pseudo-vestitus C.B. Clarke

Tufted, perennial herb, up to 440 mm tall. Basal leaf sheaths dark purple-black, glossy. Inflorescence umbellate or contracted into a head. Acute-conical papillae on fruit surface. *Glumes* russet-brown. *Flowering October to January*. Short grassland or open savanna. *Zambatis* 489.

W S C N E

rehmannianus C.B. Clarke

Small, tuft-forming, perennial herb, up to 0,54 mm high. Inflorescence a terminal, simple umbel of 5–9

rays, contracted to various degrees up to a multifid head-like structure. *Glumes* 2,9–6,7 mm long, *apices recurving*, straw-coloured. Flowering December to February. Open savanna or shrubveld on deep, soft sand. Vorster 2799.

W S C N E

solidus (Kunth) Vorster

Perennial herb, up to 1,5 m high. Robust plants with basal leaves 3,8–14,5 mm wide in middle. Fruits 1,4–2,5 mm long. *Glumes* 3,1–4,8 mm long, dark brown. Flowering October to February. Short grassland, along water-courses, dams or moist areas. Vorster 2675.

W S C N E

squarrosus (L.) C.B. Clarke

(= *Cyperus squarrosus* L.)

Dwarf annual herb, forming small tufts, up to 320 mm tall. Inflorescence a long-peduncled, terminal simple umbel of up to 7 spikes. Aristae of glumes 0,4–1,1 mm long. Fruits 0,25–0,45 mm wide, inversely pyramidal, truncate, covered with closely spaced flat-topped papillae. *Glumes* greenish, lightly tinged with purple-brown. Flowering February. Bushveld, grassland, edges of pans, vleis. Reid 478.

W S C N E

sublimis C.B. Clarke

Medium-sized, perennial herb, up to 0,7 m high. Inflorescence a terminal, simple umbel. Spikelets relatively wide, 1-flowered, densely crowded. *Glumes* with 10–14 secondary, longitudinal veins, green. Flowering November to February. Short grassland. Vorster 2560.

W S C N E

sumatrensis (Retz.) J. Raynal

(= *M. sieberianus* Nees)

Small to medium-sized perennial herb, up to 0,7 m high. Umbels fully expanded, consisting of 11–14 rays. Spikelets 2,6–6,6 mm long, 0,4–0,9 mm wide, 1- or 2-flowered. *Glumes* green. Flowering November to March. Cultivated lawns, in cultivated or abandoned lands. Vorster 2547.

W S C N E

uitenhagensis Steud.

Perennial herb, up to 0,52 m high. Inflorescence a simple umbel of 4–6 rays. Spikelets 1-flowered, densely crowded. Fruits narrowly ovate, 1,8–3,0 times as long as wide. *Glumes* greenish straw-coloured. Flowering November to January. Long grassland and deep soil. Coetzee 490.

W S C N E

Pycrus P. Beauv. (s. Afr.: 22 spp.) 0459010

Clarke. 1897. F.C. 7: 155–161.

Raynal. 1977. *Adansonia*, Scr. 2, 17: 43–47.

Lowrey & Wright. 1987. The flora of the Witwatersrand 1: 55–58.

betschuanus (Boeck.) C.B. Clarke

Perennial herb, up to 300 mm tall. Tall, slender sedge from a horizontal rhizome. Florets flat. Stolons clothed by very pale brown scales. Nut obovoid. *Glumes* dark brown. Flowering November to March. Margins of marshes and rivers. Germishuizen 4326.

W S C N E

chrysanthus (Boeck.) C.B. Clarke

Perennial herb, up to 500 mm tall. Rays basally black. Style branches 2. Nut oblong-ellipsoid, black. Plants single. *Glumes* gaping near base, ovate, boat-shaped, golden brown. Flowering January to April. Vleis. Leistner 75.

W S C N E

cimicinus (Presl) Pfeiff.

(= *P. elegantulus* C.B. Clarke)

Perennial or annual herb, up to 300 mm tall. Stems tufted on a very short rhizome. Nut ellipsoid, brown, closely and regularly marked by raised dots. *Glumes* dark brown. Flowering January. Bremekamp & Schweickerdt 391.

W S C N E

cooperi C.B. Clarke

Perennial herb, up to 400 mm tall. Roots fibrous, very thick. Leaves stout, inrolled. Umbel condensed nearly into 1 compound spike. Spikelets hard, shining. *Glumes* very dark brown. Flowering October to February. Vleis, edges of pools. Reid 1016.

W S C N E

flavescens (L.) Rchb.

Annual herb, up to 300 mm tall. *Spikelets many in a dense head, branches few and short, yellowish. Flowering January to May. Smook 2675.*

W S C N E

intactus (Vahl) J. Raynal

(= *P. ferrugineus* C.B. Clarke,

= *Cyperus intactus* Vahl)

Sparsely tufted sedge, up to 0,6 m high. Spikelets numerous, loosely spicate. Inflorescence an umbel. Leaves half the length of primary peduncle. *Glumes* ferruginous. Flowering February. Disturbed grassland. Reid 1772.

W S C N E

macranthus (Boeck.) C.B. Clarke

Perennial herb, up to 0,6 m high. Head sessile or inflorescence rays very short. Spikelets up to 30 mm long, lanceolate. Nut rugose. *Glumes* dark reddish brown. Flowering October to April. Edges of vleis. Smook 2696.

W S C N E

macrostachyos (Lam.) J. Raynal

(= *P. albomarginatus* Nees,
= *P. tremulus* (Poir.) C.B. Clarke)

Annual herb, up to 1 m high. Umbel usually compound, primary rays 3–11. Nut compressed, ellipsoid, black. *Glumes* ovate, obtuse, distant with white margins, straw-coloured or yellow. Flowering November to March. Vleis, edges of streams. Van der Schijff 2119.

W S C N E

mundii Nees

Perennial herb, up to 400 mm tall. Stoloniferous. Membranous patches on either side of keel near glume apex. Nut dotted. *Glumes* dark brown. Flowering October to May. Margins of streams, vleis. Behr 572.

W S C N E

nitidus (Lam.) J. Raynal

(= *P. lanceus* (Thunb.) Turrill,
= *P. umbrosus* Nees)

Perennial herb, up to 0.6 m high. Stolons clothed by distant scales. Rays $\pm$ 50 mm long. Spikes umbelled. Style branches 2. Nut dotted, obovoid, dark brown. *Glumes* chestnut-brown. Flowering October to February. Marshy grassland, pan basin, vleis. Codd & Dyer 9016.

W S C N E

oakfortensis C.B. Clarke

Perennial herb, up to 500 mm tall. Grow in dense clumps. Broad dark leaf sheaths eared. Head more or less dense and rounded. Rays very short with sessile spikelets. Nut beaked. *Glumes* dark brown. Flowering September to January. Vleis, seepage areas. Smook 5038.

W S C N E

pelophilus (Ridl.) C.B. Clarke

(= *P. chorisanthus* C.B. Clarke)

Annual herb, up to 250 mm tall. Stems tufted. Inflorescence of 1 and 1–8 stalked digitate or headlike spikelet clusters, 20–100 mm wide. *Glumes* 1.7–2.0 mm long, acute or mucronate, yellowish brown. Flowering January to June. Sandy soil. Oliver 7106.

W S C N E

polystachyos (Rottb.) P. Beauv. var. **polystachyos**

Perennial herb, up to 0.75 m high. Stems tufted. Spikes in an umbel of 1–7 rays, each of 10–50 spikelets. Nut oblong, nearly symmetric, brown. *Glumes* ovate, tip triangular, muticous, yellowish brown. Flowering September to April. Sandy stream beds, river banks. Codd 5350.

W S C N E

pumilus (L.) Nees

A small, tufted, annual herb, up to 160 mm tall. Inflorescence of 1 sessile and 1–6 stalked spikelet clusters. Nut dark grey, with minute tubercles in longitudinal rows. *Glumes* 1.0–1.2 mm long, conspicuously mucronate, greyish green to reddish brown. Flowering February to April. Vlei edges, along streams. Meeuse 10506.

W S C N E

rehmannianus C.B. Clarke

(= *P. flavescens* (L.) Rchb. var. *rehmannianus* (C.B. Clarke) Kük.)

Annual herb, up to 400 mm tall. *Spikelets* few in a head, branches usually several and long, blackish (probably not distinct from *P. flavescens*). Flowering December to May. Reid 764.

W S C N E

unioloides (R. Br.) Urb.

(= *P. angulatus* Nees)

Perennial herb, up to 400 mm tall. Plants tufted. Base of plant often reddish. Rhizome creeping. Nut usually flattened, black. *Glumes* yellowish brown. Flowering November to March. Vleis, marshy areas, edges of rivers. Acocks 23581.

W S C N E

Rhynchospora Vahl (s. Afr.: 8 spp.) 0492000

Van Laren et al. 1989. S. Afr. J. Bot. 55,5: 498–508.

brownii Roem. & Schult.

(= *R. glauca* Vahl,
= *R. rugosa* (Vahl) Gale)

Erect, slender, perennial herb, up to 1 m high. Inflorescence a lax panicle, always drooping at maturity. Spikelets 3.0–4.5 mm long. Nut transversely rugose. Hypogynous bristles present. *Glumes* bright castaneous or dark brown. Flowering October to February. Bogs, stream and river banks. Devenish 1794.

W S C N E

Schoenoplectus Palla (s. Afr.: 17 spp.) 0468010

Lye. 1971. Bot. Notiser 124: 287–291.
Raynal. 1976. Adansonia, Ser. 2, 15: 537–542; 16: 119–155.
Browning. 1991. S. Afr. J. Bot. 57,5: 249–259.
Browning. 1991. S. Afr. J. Bot. 57,5: 335–343.

Genus under revision. According to Retief in Arnold & De Wet, Plants of southern Africa: names and distribution (1993), the following taxa occur in the area:

articulatus (L.) Palla var. **articulatus**

(= *Scirpus articulatus* L.)

articulatus (L.) Palla var. **b**

corymbosus (Roth ex Roem. & Schult.) J. Raynal var.

corymbosus
(= *Scirpus inclinatus* (Delile) Asch. & Schweinf.)

corymbosus (Roth ex Roem. & Schult.) J. Raynal var.

brachyceras (A. Rich.) Lye

decipiens (Nees) J. Raynal

(= *Scirpus paludicola* auct., non Kunth forma *decipiens* (Nees) C.B. Clarke)

erectus (Poir.) Palla ex J. Raynal

(= *Scirpus erectus* Poir.)

lacustris (L.) Palla
(= *Scirpus lacustris* L.)

leucanthus (Boeck.) J. Raynal
(= *Scirpus leucanthus* Boeck.)

muricinix (C.B. Clarke) J. Raynal
(= *Scirpus muricinix* C.B. Clarke)

muriculatus (Kük.) J. Browning
(= *Scirpus muriculatus* Kük.)

paludicola (Kunth) Palla ex J. Raynal
(= *Scirpus paludicola* Kunth)

praelongatus (Poir.) J. Raynal
(= *Scirpus praelongatus* Poir.)

pulchellus (Kunth) J. Raynal
(= *Scirpus pulchellus* Kunth)

triqueter (L.) Palla
(= *Scirpus triqueter* L.)

Schoenoxiphium Nees (s. Afr.: 18 spp.) 0521000

Kukkonen. 1983. *Bothalia* 14: 819–823.

Burt. 1986. *Notes R. bot. Gdn Edinb.* 43: 364–366.

Genus under revision. According to Retief in Arnold & De Wet, *Plants of southern Africa: names and distribution* (1993), the following taxa occur in the area:

lanceum (Thunb.) Kük.
(= *Kobresia lancea* (Thunb.) T. Koyama)

lehmannii (Nees) Steud.
(= *Kobresia lehmannii* (Nees) T. Koyama var. *lehmannii*,
= *K. lehmannii* (Nees) T. Koyama var. *schimperiana* (Boeck.) T.
Koyama)

madagascariense Cherm.

rufum Nees
(= *Kobresia rufa* (Nees) T. Koyama,
= *S. buchananii* C.B. Clarke)

schweickerdtii Merxm. & Podlech
(= *Kobresia schweickerdtii* (Merxm. & Podlech) T. Koyama)

sparteum (Wahlenb.) C.B. Clarke
(= *Kobresia sparteum* (Wahlenb.) T. Koyama)

Schoenus L. (s. Afr.: 1 sp.) 0477000
Dyer. 1976. *Gen.* 2: 886.

nigricans L.

Perennial herb, up to 300 mm tall. Tufted. Stems and leaves bright, dark green. *Inflorescence a terminal, bracteate head, reddish brown.* Achene sessile or stalked. *Flowering October.* Tall, open shrubland, growing in water. *Krynauw 839.*

W S C N E

Scirpus L. (s. Afr.: 15 spp.) 0468000

Clarke. 1898. *F.C.* 7: 210–234.

Levyns. 1944. *Jl S. Afr. Bot.* 10: 25–32.

Reid. 1992. *Pers. comm.*

burkei C.B. Clarke

Perennial herb, up to 1 m high. Inflorescence a compound umbel of heads 6–8 mm in diameter. Leaves hard, rolled, with broad basal sheaths. Stem rounded, broader than leaves. Nuts blackish, $\pm$ 0,5 mm long. *Glumes reddish brown. Flowering October to April.* Grassland, vleis, pans, kloofs. *Arnold 272.*

W S C N E

dioecus (Kunth) Boeck.

Perennial herb, up to 400 mm tall. Inflorescence single, rounded, pseudolateral, overtopped by a stout, sharp-pointed bract. Basal sheaths splitting, acute. Nuts greyish with a reticular surface pattern. *Glumes with membranous margins, ovate, boat-shaped, $\pm$ 2 mm long, dark brown. Flowering October to January.* Edges of pans. *Smook 6276B.*

W S C N E

falsus C.B. Clarke

Yellowish green, tufted, perennial herb, up to 400 mm tall. Leaves longer than stem, linear-setaceous. Heads several, usually agglomerated. *Glumes dark brown. Flowering November to February.* Grassland, vlei margins. *Reid 1017.*

W S C N E

ficioides Kunth

Tufted, perennial herb, up to 400 mm tall. Leaves longer than stem, linear-setaceous. Head 1. *Glumes reddish dark brown. Flowering November to January.* Marshy grassland. *Drews 213.*

W S C N E

microcephalus (Steud.) Dandy

Perennial herb, up to 200 mm tall. Stem triangular. Spikelets very small, clustered into a terminal head less than 5 mm across. Three subulate bracts subtending head, not longer than 50 mm. *Glumes white. Flowering January.* Grassland. *Peeters, Gericke & Burelli 616.*

W S C N E

varius C.B. Clarke

Perennial herb, up to 0,6 m high. Inflorescence a compound, dense head, more than 12 mm in diameter. Leaves herbaceous, without cross-venation. Nuts shining, minutely rugose, not beaked, $\pm$ 0,7 mm long. *Glumes acute, mucronate, prominently green-keeled, reddish brown. Flowering January to April.* Vleis. *Mogg 12392.*

W S C N E

Scleria P.J. Bergius (s. Afr.: 23 spp.) 0515000

Franklin Hennessy. 1985. *Bothalia* 15: 505–530.

aterrima (Ridl.) Napper(= *S. catophylla* C.B. Clarke)

Perennial herb, up to 0,7 m high. Leaves crowded towards base of culm. Plant sometimes with 1 or several soft, fleshy soboles arising from culm cluster. Inflorescence unbranched, with 4–15 clusters of 1–7 reflexed spikelets. Achene smooth. *Glumes densely hairy, hairs purplish black, black in colour. Flowering January to February.* Open, wet, sandy areas. *Venter 5851.*

W S C N E

bulbifera Hochst. ex A. Rich.(= *S. atrosanguinea* Hochst. ex Steud.,
= *S. schweinfurthiana* Boeck.)

Perennial herb, up to 1 m high. Culm bases distinctly bulbous and woody. Leaves subequally spaced along culm. Inflorescence simply glomerate-spicate or with 1 or several basal branches. *Glumes castaneous or dark reddish brown. Flowering October to December.* Dry or seasonally wet or permanently boggy, open grassland. *Acocks 10745.*

W S C N E

dieterlenii Turrill(= *S. flexuosa* Boeck.)

Perennial herb, up to 370 mm tall. Rhizome very slender, terminating in a swollen tuber up to 10 mm long. Leaves 1,0–2,5 mm broad. Achene subglobose, trabeculate-verrucose, grey, trabeculae pale to bright reddish gold. *Glumes orange-brown with red striae. Flowering January to March.* Seasonal bogs. *Smook 4969.*

W S C N E

dregeana Kunth(= *S. holcoides* Kunth)

Perennial herb, up to 1 m high. Culms clustered, sometimes with 1 or more soft, terete soboles from base of culm cluster. Rhizome very short. Inflorescence unbranched or with a few short basal branches. Achene smooth or tuberculate or trabeculate towards apex. *Glumes glabrous or sparsely ciliate, blackish red, red-brown or pale with streaks. Flowering November to March.* Open, permanent bogs and wet stream banks. *Devenish 970.*

W S C N E

foliosa Hochst. ex A. Rich.

Annual herb, up to 0,6 m high. Plant caespitose, without a rhizome. Achene alveolate-lacunose proximally, smooth distally. *Glumes castaneous or dark brown. Flowering March to May.* Open, seasonally shallow pans. *Du Toit 257.*

W S C N E

melanomphala Kunth

Perennial herb, up to 2 m high. Panicles compact, spiciform, 1 or 2(–4). Leaves evenly spaced along length of column. Female glumes 7–11 mm long, glabrous adaxially. Achene ovoid, beakless, grey with blackish apex. *Glumes reddish brown or blackish red. Flowering December to February.* Open, perennial wet habitats. *Hemm 556.*

W S C N E

nutans Willd. ex Kunth

Perennial herb, up to 500 mm tall. Inflorescence unbranched, with spikelet clusters reflexed at maturity. Achene smooth or lightly tuberculate. *Glumes densely hirsute, pale, red or black. Flowering November.* Open, permanently boggy areas. *Killick & Strey 2506.*

W S C N E

transvaalensis E.F. Franklin

Perennial herb, up to 1,25 m high. Panicles dense, golden or reddish. Foliaceous bract of terminal panicle subulate, 1 or 2 mm broad, 10 mm behind apex, sometimes exceeding inflorescence. Culm bases 9–10 mm in diameter, swollen. *Glumes reddish brown. Flowering September to April.* Seasonally damp, open or semi-shaded habitats. *Arnold 336.*

W S C N E

welwitschii (Ridl.) C.B. Clarke

Perennial herb, up to 1 m high. Inflorescence rhachis drooping, 60–250 mm long. Spikelets 5–7(–8) mm long. *Glumes tawny, glabrous or glabrescent, pale stramineous with faint reddish streaks. Flowering October to December.* Boggy grassland. *Du Plessis 880.*

W S C N E

woodii C.B. Clarke

Perennial herb, up to 0,75 m high. Rhizome soft, fleshy, strongly scented, white or pink, tuberous, shrinking markedly soon after removal from soil. Inflorescence much branched, branches delicate. Lamina profile V-shaped. *Glumes pale red with darker red striae. Flowering November to March.* Seasonally boggy, open areas and damp woodland in partial shade. *Acocks 11340.*

W S C N E

Tetraria P. Beauv. (s. Afr.: 45 spp.) 0494000

Clarke. 1898. F.C. 7: 275–290.

Turrill. 1925. Kew Bull. 1925: 67–76.

Koyama. 1961. J. Fac. Sci. Tokyo Univ. 8: 37–148.

cuspidata (Rottb.) C.B. Clarke

Perennial herb, up to 500 mm tall. Leaves filiform. Spikelets small. Inflorescence diffuse. Stems terete, slender. Nut yellowish. *Glumes dark brown. Flowering July to August and in April.* Grassland. *Van der Schijff 5609.*

W S C N E

natalensis (C.B. Clarke) T. Koyama(= *Costularia natalensis* C.B. Clarke)

Perennial herb, up to 1,5 m high. Rather stout plants. Stems with nodes bearing leaves or bracts through their whole length. Leaves tough. Panicle oblong, compound, with many spikelets. *Glumes dark brown. Flowering November to March.* Wet and montane grassland, in shade of pine trees. *Hilliard & Burt 14315.*

W S C N E

DIOSCOREACEAE

Climbers, herbaceous or partly woody; usually dioecious. Rootstocks tuberous, thick woody or rhizomatous. Leaves alternate, cordate, sagittate, rounded or truncate at base, entire to digitately divided. Flowers regular. Perianth 6-lobed or divided to base. Stamens 6. Ovary inferior, 3-locular. Fruit a capsule, 3-angled with angles prominent or winged. Seeds winged.

Dioscorea *L.* (s. Afr.: 20 spp.) 1252000
Burkill. 1952. JI S. Afr. Bot. 18: 177–191.
Archibald. 1967. JI S. Afr. Bot. 33: 1–46.
Von Teichman *et al.* 1975. Boissiera 24: 215–224.

cotinifolia *Kunth*
(= *D. malifolia* Baker)

Climber. Tubers several on roots from a perennial crown. Stems dextrorse. Leaf lamina broadly ovate, apex acuminate or acute, base deeply cordate. Seeds distally winged. *Flowers white; October to January.* Mountain woodland, thicket and bushland and forest. *Stalmans 291, Mogg 28187.*

W S C N E

dregeana (*Kunth*) *T. Durand & Schinz*

Climber. Plant hairy. Leaves 3-foliolate, covered with silvery, velvet hairs, broadly ovate, apex attenuate, up to 150 × 110 mm. Fruit up to 50 × 25 mm. *Flowers green; October to January.* Woodland. *Hemm 337.*

W S C N E

dumetorum (*Kunth*) *Pax*

Liane. Leaves alternate, 3-foliolate, petiole up to 200 mm long. Leaflets up to 210 mm long, median leaflet obovoid, acutely acuminate. Ultimate spikelets of inflorescence up to 15 mm long, subsessile or on peduncles up to 5 mm long. *Flowering October.* Mountain summits. *Van Wyk & Theron 4684.*

W S C N E

quartiniana *A. Rich.* var. **quartiniana**

Scrambler. Flower bracts with short mucros. Inflorescence a densely flowered spike. Leaves digitately compound. Leaflet obovate with a prominent mucro.

Flowers white; December to March. Woodland. *Van der Schijff 3509.*

W S C N E

retusa *Mast.*

Creepers. Flowers in elongated racemes. Pedicels 1,0–1,5 mm long. Fruits densely packed along rachis. Leaves elliptic to obovate, mucronate, margin unevenly lobed. *Flowers yellow; November to January.* Bushveld, densely vegetated kloofs, rocky hillsides. *Theron 3444.*

W S C N E

rupicola *Kunth*

Creepers. Leaves simple, ovate, base cordate-hastate with large central lobe. Stamens 3. Female flowers in lax spikes. *Flowering February.* Riverine forest. *Kluge 880.*

W S C N E

sylvatica (*Kunth*) *Eckl. sens. lat.*
(= *Testudinaria sylvatica* Kunth)

Scrambler. Leaves deltoid, deeply cordate, usually shallowly 3-lobed, 40–60 mm long and broad. Capsules obovate, reddish mottled. *Flowers yellow; October to January.* Bushveld, scrub. *Hemm 498.*

W S C N E

undatiloba *Baker*

Creepers. Leaves simple, blade cordate-deltoid, palmately 5–7-lobed more than halfway down to petiole, central lobe large, triplinerved from base to apex. *Flowering May.* Forest. *Junod 2182.*

W S C N E

ERIOCAULACEAE

Tufted herbs, often in marshes. Leaves usually crowded, radical, grass-like, often with a white spongy latticed tissue at base. Flowers unisexual, in capitula bearing male and female flowers, regular or irregular; scape surrounded at base by a closed sheath. Sepals 2–4, free or variously connate. Petals 2 or 3, free or cupular. Stamens 4–6. Ovary superior, 2- or 3-locular. Fruit a capsule.

Key after Obermeyer in F.S.A. 4,2: 9 (1985).

Stamens 4–6; scapes and leaves glabrous; petals and female flowers free or 0; style with 2 or 3 filiform stigmatic branches, without appendages; peduncular sheath breaking up irregularly at apex **Eriocaulon**

Stamens 3; scapes and leaf bases glandular hairy and setose; petals of female flowers united in middle; style with 3 filiform stigmatic branches and 3 filiform sterile appendages ending in swollen tips; peduncular sheath forming an arum-like spathe at apex **Syngonanthus**

Eriocaulon L. (s. Afr.: 12 spp.) 0828000

Obermeyer. 1985. F.S.A. 4,2: 9–19.

abyssinicum Hochst.

Small, tufted, dome-shaped, annual up to 100 mm tall. Capitula dark, except involucre bracts. Bracts and sepals broadly ovate, obtuse. Receptacle usually quite glabrous. Sepals 3, with a smooth margin. *Flowers grey to black*. Streambanks and riverbanks, seepage areas, marshes. *Smook 3092*.

W S C N E

africanum Hochst.

(= *E. natalensis* Schinz,
= *E. woodii* N.E. Br.)

Perennial herb, up to 300 mm tall. Leaves in basal rosettes. Anthers white. Aquatic with submerged leaves. Often viviparous and stoloniferous. *Flowers white; August and March*. Flowing water. *Hemm 216*.

W S C N E

angustisepalum H.E. Hess

Dome-shaped, annual herb, up to 70 mm tall. Leaves in basal rosettes. Anthers black. Petals with a glabrous margin and without a black, apical gland. Testa of seed reticulate. Sepals 2. Petals 2. Sandy, marshy places, seepage areas along road verges, wet rocky outcrops. *Repton 1696*.

W S C N E

dregei Hochst. var. dregei

Perennial herb, up to 350 mm tall. Leaves 100–250 mm long, linear-acuminate, apex obtuse, ending in a small knob. Capitula few, globose to semidiscoid, ± 10 mm in diameter, densely covered with short white setae. *Flowers greyish white; December to February*. Marshes, stream courses. *Mogg 14679*.

W S C N E

dregei Hochst. var. sonderianum (Körn.) Oberm.

(= *E. baurii* N.E. Br.,
= *E. sonderianum* Körn.)

Perennial herb, up to 100 mm tall. Leaves up to 80 mm long, long acuminate, ending in a fine point. Capitula few, globose to semidiscoid, ± 8 mm in diameter,

densely covered with short white setae. *Flowers white; October to March*. Streambanks, marshes, vleis. *Mauve & Venter 5033*.

W S C N E

hydrophilum Markötter

Annual herb, up to 100 mm tall. Leaves in basal rosettes. Anthers black. Petals usually absent. Plant usually submerged, except for black capitula. Testa of seed with transverse, white, fringed ridges. *Flowers black; February to March*. Pans, streams. *Devenish 1701*.

W S C N E

maculatum Schinz

Small, annual herb, up to 100 mm tall. Leaves in basal rosettes. Anthers black. Petals with a glabrous margin. Sepals 2, boat-shaped with a convex, distended, papillate keel, protruding laterally from floral bract when in fruit. Moist, sandy areas along streams, marshes or temporary wet places. *Mauve & Venter 5060*.

W S C N E

transvaalicum N.E. Br.

Annual or perennial herb, up to 160 mm tall. Leaves in basal rosettes, aerial. Anthers black. Plants solitary. Capitula dark, globose, ± 5 mm in diameter. White setae on bracts, sepals and petals. *Flowers grey to black; March to June*. Vleis, pools. *Mauve & Venter 5075*.

W S C N E

Syngonanthus Ruhland (s. Afr.: 1 sp.) 0832010

Obermeyer. 1985. F.S.A. 4,2: 19–21.

wahlbergii (Körn.) Ruhland(= *Paepalanthus wahlbergii* Körn.)

Small, compact, perennial herb, up to 100 mm tall. Plant sparsely to densely covered by patent gland-tipped hairs. Peduncular sheath forming an arum-like spathe at apex. Leaves numerous, in compact rosettes, submerged. *Flowers light to dark brown; June to January*. Running water, streams, swamps. *Mauve & Venter 5175*.

W S C N E

FLAGELLARIACEAE

Climbers, supported by tendril-tipped leaves. Stems herbaceous, terete. Leaves alternate, linear-lanceolate, attenuate to an apically, spirally coiled tendril; closely ribbed; basal sheath tubular but slit to base surrounding stem, forming an auriculate constriction where it is joined to lamina. Flowers small, regular, bisexual. Perianth 6, free, petaloid. Stamens 6. Ovary superior, 3-locular. Fruit a berry.

Flagellaria L. (s. Afr.: 1 sp.) 0798000

Brown. 1897. F.C. 7: 15.

guineensis Schumach.

Perennial with erect stems or climbing by means of tendril-tipped leaves. Flowers small, in terminal pan-

icles. Fruit a 1–3-seeded berry. *Flowering April*. Forest. *Dyke sub Herb. Marloth 5308*.

W S C N E

HYDROCHARITACEAE

Aquatic herbs, partially or completely submerged, usually monoecious or dioecious. Leaves radical, in rosettes or cauline, alternate, opposite or crowded, submerged or on floating blades. Flowers unisexual, exerted during anthesis. Male flowers numerous. Female flowers mostly solitary inside spathe. Ovary inferior. Fruit rounded or tubular, fleshy or leathery.

Key after Obermeyer in F.S.A. 1: 100 (1966).

Spathes sessile, axillary; plants with long, leafy, submerged stems from a perennial rhizome **Lagarosiphon**
Spathes pedunculate; rosulate, acauline annuals **Ottelia**

Lagarosiphon Harv. (s. Afr.: 5 spp.) 0088000

Obermeyer. 1966. F.S.A. 1: 102–108.

Symoens & Triest. 1983. Bull. Jard. bot. nat. Belg. 53: 441–488.

cordofanus Casp.

(= *L. crispus* Rendle,

= *L. tsotsorogensis* Bremek. & Oberm.)

Aquatic herb, submerged. Leaves alternate, opposite or occasionally verticillate, central area broad, usually with transverse septa. Leaf teeth on excrescences. *Female flowers white*. Pans. *Van der Schijff 4198*.

W S C N E

major (Ridl.) Moss ex Wager

(= *L. muscoides* Harv. var. *major* Ridl.)

Aquatic herb, submerged. Leaves thick, opaque, 2–3 mm broad, cells small, somewhat papillose-rhomboid. Teeth of leaves minute, blunt, ascending. Vleis, streams, rivers, dams. *Kleber sub PRE 29248*.

W S C N E

muscoides Harv.

(= *Hydrilla dregeana* Presl)

Aquatic herb, submerged. Leaves with a hyaline margin, consisting of at least 3 layers of cells without chlorophyll. Male spathes containing up to 40 flower buds. *Female flowers whitish*. Pans, vleis, dams. *Theron 2478*.

W S C N E

verticillifolius Oberm.

Aquatic herb, submerged. Leaves green to margin, in verticils of 6–8, teeth on small excrescences, central area narrow. Pans. *Codd 6069*.

W S C N E

Ottelia Pers. (s. Afr.: 4 spp.)

0095000

Obermeyer. 1966. F.S.A. 1: 108–111.

exserta (Ridl.) Dandy

(= *Boottia exserta* Ridl.)

Aquatic herb. Leaves with an ovate to cordate, floating lamina. Plant dioecious. Lamina up to 125 × 55 mm, apex rounded. *Flowers white; August and May*. Shallow pans. *Codd 6136*.

W S C N E

ulvifolia (Planch.) Walp.

(= *O. australis* Bremek.)

Aquatic herb. Leaves all submerged, lanceolate, tapered at base, margin entire, undulate. Monoecious. Flowers bisexual. *Flowers yellow or cream; February to May*. Dams, rivers, streams, pools. *Mauve 5286*.

W S C N E

HYPOXIDACEAE

Herbs with a vertical tuberous rhizome. Leaves basal, usually arranged in 3 ranks and hairy. Flowers regular, borne on axillary, leafless, usually hairy stalk. Perianth segments 3 + 3, showy, yellow or white, often green-backed, persistent, hairy on outer surface. Stamens 6, arising from perianth; filaments short. Ovary inferior. Fruit a capsule, crowned by remains of perianth. Seeds black.

Key after Dyer, Gen. 2: 955 (1976).

- 1a Ovary 1-locular, with 3 parietal placentas **Empodium**
1b Ovary 3-locular with axile placentas 2
2a Flowers yellow; perianth stellate, with 4–6 free segments; stamens exerted, 1-seriate **Hypoxis**
2b Flowers red or white; inner perianth segments covering centre of flower and hiding 2-seriate stamens **Rhodohypoxis**

Empodium Salisb. (s. Afr.: 7 spp.) 1229010

Nel. 1914. Bot. Jb. 51: 234–340.

Burt. 1973. Notes R. bot. Gdn Edinb. 32: 308–314.

elongatum (Nel) B.L. Burt

(= *Forbesia elongata* Nel)

Geophyte, up to 250 mm tall. Rootstock a corm. Perianth segments long acuminate. Leaves 3–7, well or

fully developed at anthesis, about 200 mm long, 3–4 mm broad, not unfolding with age. Ovary usually soon and distinctly exserted from leaf. *Flowers yellow; October to December*. Grassland. *Leendertz sub TRV 9329*.

W S C N E

Hypoxis L. (s. Afr.: 43 spp.) 1230000

Baker. 1896. F.C. 6 (p.p.).

Nel. 1914. Bot. Jb. 51: 234–340.

Burt. 1988. Notes R. bot. Gdn Edinb. 45,2: 188–191.

acuminata Baker

Geophyte, up to 250 mm tall. Leaves linear, 12 mm broad low down, tapering to acuminate apex very gradually, up to 300 mm long, weak. *Flowers racemose; yellow; August to December*. Grassland, vleis. *Drews 141*.

W S C N E

angustifolia Lam. var. angustifolia

Geophyte, up to 200 mm tall. Leaves linear, 4–6 mm wide, thin, veins slender, slightly hairy. Perianth limb 6–12 mm long. *Flowers corymbose; yellow; September to February*. Grassland. *Vorster 328E*.

W S C N E

angustifolia Lam. var. buchananii Baker

Geophyte, up to 350 mm tall. A large shade-growing variety with longer leaves of very thin texture. Pedicels longer than those of var. *angustifolia*, very slender. *Flowers yellow; November to December*. Vleis, moist situations. *Kluge 320*.

W S C N E

argentea Harv. ex Baker var. argentea

Geophyte, up to 200 mm tall. Leaves linear, ± 2 mm wide, firm, strongly veined, densely persistently silky all over both surfaces. *Flowers corymbose; yellow; October to April*. Grassland, rocky hillsides. *Liebenberg 8396*.

W S C N E

argentea Harv. ex Baker var. sericea Baker

Geophyte, up to 200 mm tall. Leaves not so firm and thick in texture and less silky than in var. *argentea*. *Flowers yellow; February*. Grassland, stony outcrops. *Louw 686*.

W S C N E

colchicifolia Baker

(= *H. latifolia* Hook.,

= *H. oligotricha* Baker)

Geophyte, up to 400 mm tall. Leaves lanceolate, 35–50 mm broad, acuminate, strongly ribbed. *Flowers racemose*. Peduncles slender, hairy. Outer perianth segments greenish and hairy on back. *Flowers yellow; March*. Grassland. *Leendertz 6247*.

W S C N E

costata Baker

Geophyte, up to 300 mm tall. Leaves strongly ciliate, oblong-lanceolate. *Flowers many, racemose*. Ovary villous. *Flowers yellow; November to December*. Grassland. *Kluge 2652*.

W S C N E

filiformis Baker

Geophyte, up to 300 mm tall. Leaves filiform, ± 2 mm broad. Inflorescence 1- or 2-flowered. Perianth limb 6–12 mm long. Corm 6–8 mm in diameter. *Flowers yellow; September to April*. Grassland. *Devenish 765*.

W S C N E

galpinii Baker

Geophyte, up to 400 mm tall. Leaves lanceolate or oblanceolate, erect. Peduncle hairy. Racemes many-flowered. Perianth very hairy on outside. Ovary also densely hairy. *Flowers yellow; October to December*. Grassland. *Raal 1015*.

W S C N E

gerrardii Baker

Geophyte, up to 120 mm tall. Leaves linear, 4–6 mm wide, firm, strongly veined, softly pilose. *Flowers corymbose; yellow; October to December*. Grassland. *Devenish 1758*.

W S C N E

hemerocallidea Fisch. & C.A. Mey.

(= *H. rooperi* S. Moore)

Geophyte, up to 300 mm tall. Acaulescent with a large underground corm, crowned with a ring of bristles. Leaves distichous, 300 $\times$ 32 mm, strap-shaped, folded. *Flowers yellow; September to March*. Grassland and mixed woodland. *Repton 2807*.

W S C N E

interjecta Nel

Geophyte, up to 150 mm tall. Leaves up to 50 $\times$ 12 mm, glabrous, ribbed. Peduncle up to 150 mm, densely hairy. Outer part of perianth segments densely hairy. Filaments filiform. Style very short, 2 mm long. *Flowers yellow; September to December*. Grassland. *Behr 607*.

W S C N E

iridifolia Baker

(= *H. nitida* I. Verd.,

= *H. obtusa* Burch. ex Edwards)

Geophyte, up to 350 mm tall. Leaves about 12–18 mm wide at base, acuminate, hairy. *Flowers racemose*. Peduncle and back of outer perianth segments densely hairy. *Flowers yellow; August to March*. Grassland. *Pettifer 195*.

W S C N E

kraussiana Buchinger

Geophyte, up to 150 mm tall. Corm ovoid, crowned with a dense mass of bristles. Leaves 10–15, subulate from a linear base. Peduncles hairy. Perianth segments

oblong-lanceolate, outer densely hairy all over back. *Flowers yellow; November.* Mountain grassland. *Mathews 718.*

W S C N E

limicola *B.L. Burt*

Geophyte, up to 40 mm tall. Outer leaves usually flat on ground. Tepals 4–6 mm long. Peduncle with a subulate bract. Leaves thin. *Flowers yellow; September to October.* Grassland, vleis. *Kluge 1379.*

W S C N E

membranacea *Baker*

Geophyte, up to 110 mm tall. Leaves lanceolate, 25–75 mm long, membranous, hairy. Inflorescence 2- to several-flowered. *Flowers white; December.* Grassy hillsides. *Thorncroft 1063.*

W S C N E

multiceps *Buchinger ex Baker*

Geophyte, up to 150 mm tall. Corm globose, crowned with a dense ring of long wiry bristles. Leaves oblong or oblong-lanceolate, ribbed, clothed with stellate hairs. *Flowers yellow; October to January.* Grassland. *Codd 5749.*

W S C N E

neliana *Schinz*

Geophyte, up to 200 mm tall. Leaves erect, thinly hairy. *Flowers yellow; October.* Grassland. *Goossens 23.*

W S C N E

parvifolia *Baker*

Geophyte, up to 60 mm tall. Leaves lanceolate, 25–37 mm long, moderately firm, hairy. Peduncles very slender, hairy, 1- or 2-flowered. Segments hairy outside. *Flowers bright yellow; September.* Grassland, stony soil. *Galpin 1059.*

W S C N E

parvula *Baker* var. **parvula**

(= *H. brevifolia* Baker)

Geophyte, up to 90 mm tall. Leaves oblong-lanceolate, moderately firm, thinly and softly hairy. Inflorescence

1-flowered. *Flowers yellow; December to January.* Damp grassland. *Van der Schijff 4818.*

W S C N E

patula *Nel*

Leaves 100–120 mm long, 8–10 mm broad, 8–10-nerved, nerves equal. Inflorescence 140–150 mm long. *Flowers yellow; October.* Mountainsides. *Galpin 1100.*

W S C N E

rigidula *Baker* var. **rigidula**

Geophyte, up to 450 mm tall. Leaves rigidly coriaceous, linear, 6–8 mm broad, up to 450 mm long. Peduncles slender, up to 300 mm long, shortly pilose. *Flowers yellow; September to January.* Grassland. *S.A.A.B. 1/29.*

W S C N E

rigidula *Baker* var. **pilosissima** *Baker*

Geophyte, up to 450 mm tall. Leaves, peduncle and perianth shaggy with denser, longer hairs than var. *rigidula.* *Flowers yellow; October to January.* Grassland. *Retief & Herman 99.*

W S C N E

Rhodohypoxis *Nel* (s. Afr.: 6 spp.) 1230020

Hilliard & Burt. 1978. Notes R. bot Gdn Edinb. 36: 43–76.

baurii (*Baker*) *Nel* var. **confecta** *Hilliard & B.L. Burt*

Perennial herb, up to 60 mm tall. Fruiting pedicels erect. Leaves bright green, erect, 25–75 × 1.5–5.0 mm. *Flowers with outer perigone segments at least 10–16 × 4–9 mm, white, pink or deep red; November.* Amongst flat rocks, moist grassland situations. *Hilliard & Burt 9189.*

W S C N E

milloides (*Baker*) *Hilliard & B.L. Burt*

(= *Hypoxis milloides* Baker,
= *R. palustris* Killick)

Geophyte, up to 170 mm tall. Ovary not beaked. Leaves bright green, ending in a solid veinless tip, nearly glabrous, apex also so. *Flowers bright red, more rarely pink or white; November.* Grassland, marshes. *Hilliard & Burt 9171.*

W S C N E

IRIDACEAE

Herbs with corms or rhizomes. Stems often erect and leafy. Leaves sword-shaped and arranged in 2 ranks. Flowers regular or irregular. Perianth showy with 3 + 3 segments, often united below into a tube. Stamens 3. Ovary inferior, 3-locular; style 3-lobed. Fruit a capsule.

Key after Dyer, Gen. 2: 962–965 (1976).

- 1a Rootstock a rhizome 2
- 1b Rootstock a corm. 4

2a	Perianth tube well developed; inflorescence a spike	Schizostylis
2b	Perianth tube absent or short; inflorescence various, but not a spike	3
3a	Style simple or shortly lobed at apex	Aristea
3b	Style divided into 3 long branches, branches flattened and petal-like, deeply divided at apex	Dietes
4a	Scape entirely subterranean	5
4b	Scape produced above ground	14
5a	Corm tunics of hard woody, overlapping layers, inner layer entire, outer layers often cracked or split	6
5b	Corm tunics fibrous, cork-like, or reticulate	11
6a	Style branches deeply forked or multifid	7
6b	Style branches entire (3 only)	9
7a	Produced leaf/leaves not inserted on corm	Lapeirousia
7b	Produced leaves inserted on corm	8
8a	Leaf terete or subterete, not 4-grooved	Syringodea
8b	Leaf terete or linear, falcate or coiled, always 4-grooved	Romulea
9a	Style dividing at apex of perianth tube, branches long, spreading	Hesperantha
9b	Style exerted from perianth tube, branches short	10
10a	Leaves terete or subterete, with an adaxial groove	Syringodea
10b	Leaves equitant, bifacial or sometimes with an equitant apex	Lapeirousia
11a	Perianth tube lacking; flowers pedicellate	Moraea
11b	Perianth tube well developed; flowers sessile or subsessile	12
12a	Leaves plicate	Babiana
12b	Leaves not plicate	13
13a	Flowers actinomorphic with lobes subequal, acute	Duthiastrum
13b	Flowers medianly zygomorphic with unequal obtuse lobes, upper somewhat larger and lower bearing median calli	Tritonia
14a	(5) Flowers usually pedicellate; floral bracts inserted at base of pedicel only; inflorescence a cymose corymb (rarely a solitary flower) enclosed by 2 large, opposed bract-like spathes	15
14b	Flowers sessile (or apparently pedicellate in a few cases), with floral bracts located at base of ovary (if pedicellate, bract also at base of pedicel); inflorescence a spike or panicle, not enclosed by opposed bract-like spathes	18
15a	Leaves equitant; corms persistent with evanescent, membranous tunics	Ferraria
15b	Leaves bifacial or terete (rarely equitant at apex); corms annual with tough, persistent tunics	16
16a	Ovary subsessile, produced to form an elongated sterile tube, above which flower is borne	Gynandriris
16b	Ovary pedicellate, not produced above as a sterile tube	17
17a	Style crests shorter than width of stigma and/or margin of crest continuous with stigma lobe, or crests absent; perianth segments subequal	Homeria
17b	Style crests well developed, longer than width of stigma, or if shorter, then inner perianth segments much smaller than outer, or margin of style crests not continuous with margin of stigma lobe	Moraea
18a	Style branches deeply divided or multifid	19
18b	Style branches entire or slightly cleft or bilobed at apex	22
19a	Inflorescence a simple or branched spike; flowers zygomorphic	Watsonia
19b	Inflorescence a compound or reduced to a solitary flower, but not a spike	20
20a	Inflorescence a corymbose panicle	Lapeirousia
20b	Inflorescence reduced, often to a solitary flower, if branched, flowers single on each branch	21
21a	Corm tunics of woody, overlapped layers; leaves narrow, 4-grooved	Romulea
21b	Corm tunics of fine, reticulate fibres; leaves broad, prostrate	Freesia
22a	Leaves pleated; leaves and scape glabrous; bracts dry and brown	Crocasmia
22b	Leaves not pleated, but either plane, terete, crisped or ribbed	23
23a	Corms small with tunics of hard, woody, overlapping layers (innermost entire, outer often cracked or split)	24
23b	Corms large or if small, then with tunics of papery or fibrous layers	25
24a	Style branches long, dividing at apex of a narrow, cylindric perianth tube	Hesperantha
24b	Style well exerted from perianth tube; branches short	Gladiolus
25a	Perianth symmetrical, lobes subequal or outer 3 slightly larger; stamens not unilateral and arcuate	26
25b	Perianth zygomorphic, bilabiate; upper perianth lobe largest, often hood-like; stamens unilateral and arcuate	27
26a	Bract dry, papery, pale with irregular dark longitudinal streaks; flowers pendulous, in a curved, wiry spike	Dierama
26b	Bract partly herbaceous or membranous, if dry and papery, then self-coloured, except for veins, and not irregularly streaked with dark marks; flowers facing downward on horizontal branches	Crocasmia
27a	Leaves several, soft-textured; seeds spherical with loose testa	Radinosiphon
27b	Leaves one to several, firm; seeds winged	Gladiolus

Aristea Aiton (s. Afr.: 39 spp.)

1295000

Vincent. 1985. S. Afr. J. Bot. 51: 209–252.
Goldblatt. 1993. F.Z. 12,4: 3–8.

abyssinica Pax

(= *A. cognata* N.E. Br. ex Weim.)

Perennial herb, up to 300 mm tall. Basal leaves lanceolate, 1–3 mm wide, leaf apices finely acuminate. Scape

narrow, 1–2 mm wide. Bract apices acuminate. *Flowers purplish blue; January. Grassland. Obermeyer 361.*

W	S	C	N	E
---	---	---	---	---

angolensis Baker subsp. angolensis

Perennial herb, up to 1 m high. Scape longer than 355 mm. Bract apices acuminate, incurved. Inflorescence a

lax panicle. *Flowers blue; October to February.* Grassland, streambanks. *Holt 100.*

W S C N E

angolensis Baker subsp. **acutivalvis** Weim.

Perennial herb, up to 0,7 m high. Scape longer than 355 mm. Bract apices acuminate, not incurved, deeply lacerated. Inflorescence usually simple. *Flowers blue; February.* Rocky slopes, savanna woodland, roadside grassland. *Balsinhas 3114.*

W S C N E

angolensis Baker subsp. **majubensis** (Baker) Weim.

Perennial herb, up to 345 mm tall. Scape shorter than 345 mm. Inflorescence a lax panicle, branches very slender. *Flowers blue; December to March.* Mountainsides, stony soil. *Retief 2132.*

W S C N E

angolensis Baker subsp. **pulchella** Weim.

Perennial herb, up to 0,54 m high. Scape longer than 355 mm, transversely elliptical. Bract apices obtuse and coarsely lacerated. *Flowers blue; December to March.* Mountainsides. *Thorncroft 2118.*

W S C N E

ecklonii Baker

Perennial herb, up to 0,9 m high. Capsule oblong, 10–26 × 3,5–5,0 mm. Inflorescence usually paniculately branched. Bracts and bracteoles scarious, green and rusty-brown. *Flowers pale blue to deep blue and mauve; October to April.* Grassland between forests. *Netshiungani 752.*

W S C N E

flexicaulis Baker

Perennial herb, up to 1,4 m high. Bracts with a raised midvein. Cauline leaves coriaceous. Scape transversely elliptical and not ancipitous, flexuous. *Flowers purple, blue; February.* Grassy slopes, among sandstone rock. *Liebenberg 2469.*

W S C N E

galpinii N.E. Br. ex Weim.

Perennial herb, up to 0,9 m high. Basal leaves coriaceous and prominently veined. Cauline leaves with broad hyaline and rusty-brown margins. Inflorescence with 2- or 3-flowered rhipidia. *Flowers blue or mauve; November to January.* Mountainsides with grassland. *Retief & Hernan 52.*

W S C N E

gerrardii Weim.

Robust, perennial herb, up to 1 m high. Basal leaves in a tight rosette. Scape laterally compressed and ancipitous. Capsule subglobose. Seeds predominantly oval-prismatic. *Flowers bright blue; September to December.* Moist open grassland, roadside scrub, embankments. No specimens in PRE.

W S C N E

montana Baker

Perennial herb, up to 400 mm tall. Capsules 6,0–7,5 mm long, dark brown and black. Cauline leaves two or more. Apices of upper cauline leaves incurved. Bracts very broadly ovate. *Flowers bright blue; November.* Moist grassland. *Devenish 227.*

W S C N E

schizolaena Harv. ex Baker

(= *A. curvata* N.E. Br.)

Robust, perennial herb, up to 0,93 m high. Bracts with a raised midvein, dark rusty-brown. Scape transversely elliptic and slightly ancipitous. Margins of upper cauline leaves narrowly hyaline-margined. *Flowers blue; December to March.* Along streams, moist grassy mountainsides. No specimens in PRE.

W S C N E

woodii N.E. Br.

(= *A. torulosa* auct., non Klatt)

Perennial herb, up to 1,4 m high. Apices of upper cauline leaves hyaline and fimbriate. Basal leaves narrowly spread. Bracts with finely lacerated apices. *Flowers pale blue to deep mauve; December to March.* Mountain grassland. *Onderstall 133.*

W S C N E

Babiana Ker Gawl. (s. Afr.: 64 spp.) 1310000

Lewis. 1959. JI S Afr. Bot., Suppl. 3.

hypogaea Burch. var. **hypogaea**

Geophyte, up to 200 mm tall. Perianth tube up to 55 mm long, lobes 25–60 mm long, 6–12 mm wide. Leaves linear or lanceolate, glabrous. *Flowers blue, mauve with white or yellow markings or deep purple; December to May.* Grassland. *Dyer 3935.*

W S C N E

hypogaea Burch. var. **longituba** G.J. Lewis

Geophyte, up to 150 mm tall. Perianth tube up to 70 mm long, lobes 45 mm long, 11 mm wide. Leaves linear, firmly plicate, densely pilose. *Flowers purplish blue; January to March.* Grassland, rocky places. *Schlechter 4729.*

W S C N E

Crocasmia Planch. (s. Afr.: 5 spp.) 1306010

De Vos. 1984. JI S. Afr. Bot. 50: 463–502.

aurea (Pappe ex Hook.) Planch. sens. lat.

Geophyte, up to 1 m high. Perianth tube less than twice the length of the segments. Leaves usually up to 20 mm wide, linear-lanceolate with numerous closely spaced veins. Perianth salver-shaped. Stamens and style widely exserted. Peduncle ribbed. *Flowers bright golden-orange or reddish orange; February to March.* Forest margins, wooded kloofs, riverbanks. *Codd 6419.*

W S C N E

mathewsiana (*L. Bolus*) Goldblatt ex M.P. de Vos
(= *Tritonia mathewsiana* L. Bolus)

Geophyte, up to 1,5 m high. Flowers secund, funnel-shaped, with only anthers and style branches exerted. Inflorescence a large, laxly branched panicle. *Flowers reddish orange; January to February*. Damp shady places and on margins of plantations. *Nel 293*.

W S C N E

paniculata (Klatt) Goldblatt
(= *Curtonus paniculatus* (Klatt) N.E. Br.)

Geophyte, up to 1,8 m high. Perianth tube at least twice the length of the segments. Leaves plicate, 400–600 × 25–50 mm. Branches of panicle strongly zigzag in upper part. Flowers narrowly funnel-shaped, up to 75 mm long. Plants in large clumps. *Flowers orange-red, rusty red or brownish orange; January to February*. Forest margins, grassland, moist places. *Devenish 563*.

W S C N E

Dierama K. Koch (s. Afr.: 38 spp.) 1303000
Hilliard & Burtt. 1991. *Dierama*.

adelpicum Hilliard

Cormous herb, up to 1,2 m high. Coflorescences 5–7. Bracts 10–18 × 4–6 mm, mostly very lightly flecked all over, or flecking heaviest at base and along midline, tip of each bract not or just reaching base of second bract above it. *Flowers light mauve-pink to bright magenta-pink or rarely white; September to November*. Open grassy slopes and flats. *Retief & Herman 78*.

W S C N E

floriferum Hilliard

Cormous herb, up to 0,75 m high. Coflorescences 5–9. Bracts 5–8 mm broad with 4–6 main veins each side of midvein, ± 0,25 mm apart. *Flowers white to deep mauve or pinkish purple; August to November*. Grassland. *Henrick 5111*.

W S C N E

formosum Hilliard

Cormous herb, up to 1,65 m high. Perianth tube 9–11 mm long. Bracts 8–10 mm broad. Terminal spike 5–10-flowered. Coflorescences 3 or 4(–8). *Flowers pale lilac-pink to bright cerise-pink; November to January*. Grassland. *Van der Schijff 4809*.

W S C N E

galpinii N.E. Br.

Cormous herb, up to 1 m high. Coflorescences erect or suberect. Bracts 10–20 × 3–5(–6) mm, with tip of each reaching to or beyond base of second bract above it. *Flowers light pink to bright magenta-pink, occasionally white; August to November*. Grassland. *Galpin 527*.

W S C N E

gracile N.E. Br.

Cormous herb, up to 0,75 m high. Flowering stems forming a large clump. No cormlets in leaf sheaths at base of flowering stem. Tepals 9–14 mm long, stigmas held 3–6 mm below top of perianth. *Flowers pale to deep lilac-pink or magenta; August to November*. Open grassy places. *Scheepers 756*.

W S C N E

insigne N.E. Br.

(= *D. davyi* N.E. Br.,
= *D. rupestre* N.E. Br.)

Cormous herb, up to 1,5 m high. Bracts with a solid patch of hard tissue at least near base, this often drying uniform pale buff or brown. Perianth (20–)22–36 mm long. *Flowers light pink to magenta-pink, occasionally white; October to March*. Grassland, among rock outcrops. *Turner 371*.

W S C N E

medium N.E. Br.

Cormous herb, up to 0,75 m high. Terminal spike 4–10-flowered. Coflorescences mostly 2 or 3. Bracts 4–6 mm broad, tip of each reaching to or well above base of second bract above it. *Flowers very pale mauve to magenta-pink; September to December*. Marshy grassland. *Codd 9783*.

W S C N E

mobile Hilliard

Cormous herb, up to 1,5 m high. Coflorescences (1–)3–6. Lowermost peduncles mostly 90–230 mm long. Bracts reddish brown, paler towards shoulders, main veins 4 or 5 each side of midvein. *Flowers magenta-pink to deep wine-red; August to November*. Rocky grassland. *Liebenberg 3330*.

W S C N E

mossii (N.E. Br.) Hilliard

Cormous herb, up to 1 m high. Bracts 10–18 × 4–8 mm, main veins 5 each side of midvein, white to lightly flecked, tip of each bract not reaching base of second bract above it. Perianth 19–27 mm long. Stigma held 5–12 mm below top of perianth. *Flowers mauve to magenta-pink; September to December*. Marshes, stream-banks and riverbanks. *Mauve & Venter 5019*.

W S C N E

nebrownii Hilliard

Cormous herb, up to 1 m long. Perianth 20–29 mm long. Stigma held 7–12 mm below top of perianth. Bracts with 6–8 veins each side of midvein. *Flowers very pale to deeper mauve-pink; October to November*. Mountain sourveld, grassy, stony hillsides. *Codd 5640*.

W S C N E

pauciflorum N.E. Br.

Cormous herb, up to 0,6 m high. Terminal spike with 1–4(5) flowers. Bracts bright rusty brown with 6–8

main veins each side of midvein. *Flowering October to December. Marshes. Kerfoot 8114.*

W S C N E

pictum *N.E. Br.*

Cormous herb, up to 1 m high. Coflorescences (1–)3–6. Lowermost peduncles mostly 60–110 mm long. Bracts dark brown with strongly contrasting white shoulders, main veins 6–8 each side of midvein. *Flowers light to dark mauve-pink, magenta or deep wine-red; November to February. Rocky grassland. Kluge 1506.*

W S C N E

trichorhizum (*Baker*) *N.E. Br.*

Cormous herb, up to 0,6 m high. Stems solitary or 2 or 3 tufted together. Cormlets 1 or 2, developing in axils of leaf sheaths on flowering stems. Tepals 12–19 mm long. Stigmas held 7–12 mm below top of perianth. *Flowering September to December. Moist to marshy, grassy places. Kerfoot 8706.*

W S C N E

tyrium *Hilliard*

Cormous herb, up to 2 m high. Perianth tube 9–11 mm long. Bracts 5–8 mm broad. Terminal spike 8–18-flowered. Coflorescences 8–11 (or more by compounding). *Flowers rich magenta-pink to dark reddish magenta or deep purple; December to March. Open, rocky terrain, often wedged in crevices of rock outcrops. Van der Schijff 7371.*

W S C N E

Dietes *Salisb. ex Klatt* (s. Afr.: 5 spp.) 1265010

Goldblatt. 1981. *Ann. Mo. bot. Gdn.* 68: 132–153.

flavida *Oberm.*

Perennial, evergreen herb, up to 0,7 m high. Capsule pendent, smooth-walled and without a beak. Leaves linear-ensiform, 300–500 mm long, 15–22 mm broad. *Flowers pale yellow with an orange-brown nectar guide and yellow (occasionally blue-flushed) style branches. No specimens in PRE.*

W S C N E

iridioides (*L.*) *Sweet ex Klatt*

(= *D. vegeta* (*L.*) *N.E. Br.*)

Perennial, evergreen herb, up to 0,6 m high. Capsule 20–30 mm long, erect, rough-walled, usually furrowed and with a conspicuous beak. Leaves linear-ensiform, 250–400(–600) mm long. *Flowers white with a yellow nectar guide and blue to blue-flushed style branches; July to April. Forest, woodland, streambanks. Muller & Scheepers 203.*

W S C N E

Duthiastrum *M.P. de Vos* (s. Afr.: 1 sp.) 1306020

De Vos. 1974. *Jl S. Afr. Bot.* 40: 301–309.
De Vos. 1975. *Jl S. Afr. Bot.* 41: 91.

linifolium (*E. Phillips*) *M.P. de Vos*

(= *Duthiella linifolia* (*E. Phillips*) *M.P. de Vos*,
= *Syringodea linifolia* *E. Phillips*)

Geophyte, up to 150 mm tall. Corm 10–15 mm in diameter. Leaves linear, falcate, 40–200 × 1,5–5,0 mm. Perianth tube 40–70 mm long; perianth segments 25–40 mm in diameter. *Flowers yellow; April to May. Grassland. Pettifer 445.*

W S C N E

Ferraria *Burm. ex Mill.* (s. Afr.: 10 spp.) 1272000

De Vos. 1979. *Jl S. Afr. Bot.* 45: 295–375.
Goldblatt. 1993. *F.Z.* 12,4: 11–12.

glutinosa (*Baker*) *Rendle*

(= *Moraea glutinosa* *Baker*)

Perennial herb, up to 0,7 m high, lax. Stem with gummy areas below each cyme. Corm depressed globose. Leaves linear to narrowly lanceolate, tapering gradually to an acuminate tip. Ovary 5–7 mm long, club-shaped or ellipsoid. *Flowers 30–40 mm long, exerted, brown-maroon or deep purple, often spotted and mottled with yellow and with yellow or greenish yellow, narrow margins, or cream or yellow with brown or purple spots and blotches; November to February. Sandy soil. Cross 10088.*

W S C N E

Freesia *Klatt* (s. Afr.: 15 spp.)

1316000

Goldblatt & Manning. 1995. *Syst. Bot.* 20: 161–178.

grandiflora (*Baker*) *Klatt*

(= *Anomatheca grandiflora* *Baker*,
= *Lapeirousia grandiflora* (*Baker*) *Baker*)

Cormous herb, up to 0,6 m high. Perianth segments lanceolate, forming a cup, segments more than half as long as tube. Tube 30–50 mm long. Flowers 4–6 in a lax spike. *Flowers bright scarlet; December to May. Grassland, forest margins, roadsides. Stalmans 1470.*

W S C N E

laxa (*Thunb.*) *Goldblatt & Manning*

(= *Anomatheca laxa* (*Thunb.*) *Goldblatt*,
= *Lapeirousia cruenta* (*Lindl.*) *Baker*,
= *Lapeirousia laxa* (*Thunb.*) *N.E. Br.*)

Cormous herb, up to 300 mm tall. Perianth segments broadly ovate to oblong, held at right angles to tube. Tube 20–30 mm long. *Flowers red or bright pink; October to March. Rocky grassland, in shade of bushes. Germishuizen 5026.*

W S C N E

Gladiolus *L.* (s. Afr.: 128 spp.)

1311000

Lewis *et al.* 1972. *Jl S. Afr. Bot.*, Suppl. 10.
Goldblatt. 1993. *F.Z.* 12,4: 66–102.

appendiculatus *G.J. Lewis* var. *appendiculatus*

Cormous herb, up to 500 mm tall. Anthers tailed. Perianth ± 35 mm long, narrowly campanulate. Bracts

ovate, apiculate. Leaves ensiform to lanceolate. Spike up to 20-flowered. *Flowers snow-white or white with pale pink or mauve markings; February to March. Mountainsides. Devenish 852.*

W S C N E

aurantiacus Klatt

Cormous herb, up to 0,7 m high. Leaves appearing after flowers, $\pm$ 6 arranged in a fan. Spikes up to 0,8 m high, many-flowered, distichous. Flowers $\pm$ 80 mm long. *Flowers orange to yellow; October to November. Hillsides or moist, stony ground on flats. Devenish 158.*

W S C N E

brachyphyllus F. Bolus

Cormous herb, up to 1 m high. Plant glabrous. Flowers about 50 mm long, $\pm$ tubular-campanulate, up to 10 on a spike. *Flowers pink to mauve with red streaks on lower tepals; October to November. Grassland on heavy soil. Brynard & Pienaar 4357.*

W S C N E

calcaratus G.J. Lewis

Cormous herb, up to 0,6 m high. Anthers tailed. Perianth about 45 mm long, campanulate, outer lobes encircling inner. Bracts narrowly lanceolate-acuminate. Leaves linear. *Flowers white, central area turning pale pink to pale mauve with age, yellow in throat; January to March. Grassy mountainsides. Codd 6435.*

W S C N E

catractarum Oberm.

Cormous herb, up to 0,7 m high. Leaves broadly ensiform, up to 600 $\times$ 45 mm. Peduncle and rhachis hidden by long leaf bases and sheathing bracts. *Flowers rose-pink with thin red stripes; February to March. Moist grassland. Krijt sub PRE 58472.*

W S C N E

crassifolius Baker

(= *G. dieterlenii* E. Phillips)

Cormous herb, up to 1 m high. Leaves sclerotic, yellowish green, linear with raised yellow ribs and margins. Lower lateral lobes of perianth short with a broad dark blotch near apex. *Flowers pink, red, orange, mauve, purple or white; February to April. Grassy plains and slopes. Mogg 16263.*

W S C N E

dalenii Van Geel

(= *G. natalensis* (Eckl.) Hook. f.,
= *G. psittacinus* Hook.)

Cormous herb, up to 1,5 m high. Perianth with the 3 lower lobes recurved and smaller than upper hooded lobes. Perianth tube shorter or about as long as upper lobe, lobes well-developed. *Flowering November to February. Grassland, rocky ridges, vleis. Toelken sub PRE 37059.*

W S C N E

densiflorus Baker

Cormous herb, up to 1,3 m high. Leaves leathery, glaucous, broadly linear, closely and finely nerved. Lower lateral perianth lobes nearly as long as central lobe with a yellow or dark medial line or blotch. *Flowers densely spotted with dark red, maroon, mauve or pink raised dots on a whitish or greyish background; February to April. Grassland. Stalmans 1533.*

W S C N E

dolomiticus Oberm.

Cormous herb, up to 1 m high. Flowers 40–60 mm long, widely funnel-shaped, zygomorphic. Spike secund, $\pm$ 10-flowered. Bracts ovate, acuminate, 20–30 mm long. *Flowers pale pink; March. Dolomitic rock outcrops. Enslin sub PRE 56899.*

W S C N E

ecklonii Lehm. subsp. ecklonii

Cormous herb, up to 500 mm tall. Bracts boat-shaped, large, somewhat inflated, equalling or longer than perianth. Perianth porrect with a short tube. Leaves ensiform, fairly short. *Flowers white, speckled with red or maroon or rarely pink; November to April. Grassy slopes. Devenish 1363.*

W S C N E

ecklonii Lehm. subsp. rehmannii (Baker) Oberm.

Cormous herb, up to 1 m high. Bracts boat-shaped, large, somewhat inflated, equalling or longer than perianth. Perianth porrect with a short tube. Leaves linear, up to 700 mm long. *Flowers white to pale mauve or pink, plain or faintly speckled; February to April. Sandy areas. Codd 2730.*

W S C N E

ecklonii Lehm. subsp. vinoso-maculatus (Kies) Oberm.

(= *G. vinoso-maculatus* Kies)

Cormous herb, up to 1 m high. Bracts boat-shaped, large, somewhat inflated, equalling or longer than perianth. Perianth porrect with a short tube. Leaves linear, up to 700 mm long. *Flowers white, speckled with maroon; January to March. Rocky, grassy slopes. Wasserfall sub PRE 28299.*

W S C N E

elliottii Baker

(= *G. rigidifolius* Baker)

Cormous herb, up to 0,8 m high. Plants glabrous. Leaves in a compact fan, acute with many fine close-set similar nerves. Spikes up to 25-flowered. Bracteole with 2 long teeth. *Flowers white, speckled with purple or rarely plain white; November to May. Grassland. Repton 3110.*

W S C N E

exiguus G.J. Lewis

Cormous herb, up to 0,6 m high. Leaves with a prominent margin and midrib, areas inbetween closely and finely nerved, short, narrowly lanceolate. Bracts firm, plain, smooth with hyaline margins. Perianth spotted

when dry. Flowers pink, flushed with darker pink outside; January to March. Montane grassland. Strey 3532.

W S C N E

hollandii L. Bolus

(= *G. varius* F. Bolus var. *elatus* F. Bolus)

Cormous herb, up to 1,25 m high. Perianth up to 50 mm long, erect, obliquely funnel-shaped with a narrow tube and erect, somewhat spreading lobes. Leaves glaucous, coriaceous, $\pm$ 18 mm broad with fine close-set nerves. Flowers pale pink, finely speckled and lined with red; February to April. Stony, grassy slopes. Bayliss & Leach 717.

W S C N E

invenustus G.J. Lewis

Cormous herb, up to 1,5 m high. Leaves leathery, glaucous, broadly linear, closely and finely nerved. Lower lateral perianth lobes nearly as long as central lobe with a small yellow or dark mauve blotch on central area of lower lobes. Flowers pale mauve, white or pink, not speckled; March to April. Grassy hillsides. Bornman 5LN324.

W S C N E

longicollis Baker var. **platypetalus** (Baker) Oberm.

(= *G. praelongitubus* G.J. Lewis)

Cormous herb, up to 0,8 m high. Plant glabrous. Perianth tube tubular, slightly widened above with a slight constriction at throat, over 60 mm long. Perianth lobes usually fairly short and acute, outer often longer than inner. Flowers white, cream or yellow, often with dark reddish brown or purple spotting and dark median lines; December to January. Montane grassland. Pole-Evans 958.

W S C N E

macneilii Oberm.

Cormous herb, up to 0,6 m high. Leaves linear-lanceolate to ensiform, $\pm$ 5 mm broad, glabrous with a midrib but without distinct secondary nerves. Flowers pale salmon-pink; April. Bushveld, in dolomite or in loose red soil on grassy slopes. McNeil & Mauve 4788.

W S C N E

microcarpus G.J. Lewis subsp. **italaensis** Oberm.

Cormous herb, up to 1 m high. Rhachis and spathes shortly and densely pubescent. Leaves glabrous. Plants erect. Flowers with a long, narrow tube, white, pink or mauve with dark pink or reddish median stripes on lower half of lower lobes; December. Grassland. Smuts 2371.

W S C N E

papilio Hook. f.

(= *G. purpureo-auratus* Hook. f.)

Cormous herb, up to 0,9 m high. Perianth curved, nodding, with a short tube and gaping campanulate limb. Lower lateral lobes with an oblong dark area. Flowers bright to dull yellow or purple with a dark red or purple central band; December to March. Marshy areas or damp, grassy places. Mauve 4527.

W S C N E

permeabilis D. Delaroche subsp. **edulis** (Burch. ex Ker Gawl.) Oberm.

(= *G. edulis* Burch. ex Ker Gawl.)

Cormous herb, up to 0,5 m high. Bracts without red margins, rhachis glabrous. Leaves glabrous. Seed winged. Spike few- to many-flowered. Perianth with lobes caudate and spreading, occasionally sarmen-tose. Flowers white to cream, often with a deep pink, crimson, maroon or purplish median line; November to March. Grassy slopes, sandy flats, river-banks, black turf, limestone areas. Acocks 11314.

W S C N E

pole-evansii I. Verd.

Cormous herb, up to 1 m high, hairy on all vegetative parts. Leaves in an elongated fan. Perianth about 30 mm long. Spike 1–3-branched. Flowers pale pinkish lilac, minutely speckled with broken red lines; February to March. Bushveld, granite outcrops. Smook 1137.

W S C N E

pretoriensis Kuntze

Cormous herb, up to 0,5 m high. Leaves glabrous. Seed not winged. Basal leaf broadly H-shaped in cross-section with a thick raised midrib. Flowers dull purple or pink, lower side lobes with a yellow 'eye'; December to April. Grassland, stony hillsides. Verdoorn & Dyer 3401.

W S C N E

pubigerus G.J. Lewis

(= *G. pugioniformis* Hilliard & B.L. Burt)

Cormous herb, up to 400 mm tall. Leaf blade single, dagger-like, lamina lanceolate, acuminate, 30–35 $\times$ 6 mm. Spike secund, 2–6(–8)-flowered. Capsule sub-ovoid, 9–12 $\times$ 6–7 mm. Flowers 20–30 mm long, yellow or light purple; August to October. Grassland. Kerfoot 8106.

W S C N E

robertsoniae F. Bolus

Cormous herb, up to 450 mm tall. Flowers salver-shaped. Corm tunics soft, fibrous. Perianth tube longer than lobes. Leaves linear, soft. Spike 2–5-flowered. Flowers mauve or white, tinged with pale mauve or lilac, 3 lower lobes speckled or striped with red or mauve near base, scented; October to December. Grassland, shale slopes. Turner 432.

W S C N E

rufomarginatus G.J. Lewis

(= *G. marginatus* F. Bolus)

Cormous herb, up to 500 mm tall. Bracts with red margins. Rhachis pubescent. Spike very dense, secund or subsecund, 20–30-flowered. Flowers small, 25 mm long; white or creamy yellow, densely flecked or

spotted with dark red or purple; March. Grassland, shaly slopes. *Momberg 144.*

W S C N E

sericeovillosus Hook. f. subsp. **sericeovillosus**

(= *G. ludwigii* Pappe ex Baker var. *ludwigii*)

Cormous herb, up to 2 m high. Spike with villous pubescence on rhachis and bracts, up to 40-flowered. Bracteoles with free margins. *Flowers cream, yellow or in various shades of pink, lavender or wine-red, plain or faintly spotted; December to February.* Mountain grassland or in black turf. *Devenish 330.*

W S C N E

sericeovillosus Hook. f. subsp. **calvatus** (Baker) Goldblatt

(= *G. ludwigii* Pappe ex Baker var. *calvatus* Baker, = *G. sericeo-villosus* Hook. f. var. *glabrescens* L. Bolus)

Cormous herb, up to 2 m high. Spike without villous pubescence. Rhachis and bracts glabrous or sparsely ciliate. Bracteoles often tubular below or occasionally with free margins. Spikes up to 40-flowered. *Flowers cream, yellow or in various shades of pink, lavender or wine-red, plain or faintly spotted; February to April.* Grassland. *Codd 7760.*

W S C N E

unguiculatus Baker

Cormous herb, up to 0,72 m high. Plant glabrous. Flowers about 30 mm long, bilabiate. Spike secund, rather laxly to closely 4–13-flowered. *Flowers pale white to mauve with dark transverse bands on clawed lower lateral lobes; November to December.* Grassland. *Reid 432.*

W S C N E

varius F. Bolus var. **varius**

Cormous herb, up to 1 m high. Perianth up to 70 mm long, with a long tube and long lobes. Leaves $\pm$ 8 mm wide, linear with a prominent margin and midrib, with fine close-set ribs in between. Corm with a neck of cinnamon-brown fibres. *Flowers deep pink; February to April.* Rock crevices. *Pienaar 916.*

W S C N E

varius F. Bolus var. **micranthus** (Baker) Oberm.

Cormous herb, up to 1 m high. Perianth up to 40 mm long, with a short tube and shorter lobes. Leaves linear. Bracts thin, closely ribbed, raised ribs whitish and grooves speckled with rust-coloured, longish blotches. Perianth plain when dry. *Flowers white, flushed with pale to deep pink or lilac; February to April.* Marshy areas. *Oliver 7317.*

W S C N E

vernus Oberm.

Cormous herb, up to 0,8 m high. Leaves glabrous. Seed winged. Spike many-flowered with flowers imbricate. Perianth lobes obtuse-apiculate. Bracts distinctly red-veined. *Flowers pale magenta-pink, dirty pink or mauve; July to September.* Montane grassland. *Mauve 4117.*

W S C N E

woodii Baker

Cormous herb, up to 0,6 m high. Plant hairy. Flower about 30 mm long, bilabiate, with 3–5 short sheathing bracts. Basal leaf solitary, produced after flowering period. *Flowers yellow, lilac or deep purple-maroon; October to December.* Montane grassland. *Codd 9766.*

W S C N E

Gynandriris Parl. (s. Afr.: 7 spp.) 1265020

Goldblatt. 1980. Bot. Notiser 133: 239–260.

Goldblatt. 1993. F.Z. 12,4: 24–25.

simulans (Baker) R.C. Foster

(= *G. cladostachya* (Baker) R.C. Foster, = *Moraea simulans* Baker)

Perennial herb, up to 400 mm tall. Tunicate corm 15–20 mm in diameter. Outer tepal limb spotted throughout; inner tepals 9–20 mm long. Style crests 3–6 mm long. Filaments united for less than a quarter of their length. *Flowers pale blue-lilac with darker speckles and yellow nectar guides; August to October.* Xeric grassland. *Louw 1738.*

W S C N E

Hesperantha Ker Gawl. (s. Afr.: 65 spp.) 1301000

Foster. 1948. Contr. Gray Herb. Harv. 156: 3–27.

Goldblatt. 1993. F.Z. 12,4: 59–62.

baurii Baker subsp. **baurii**

Cormous herb, up to 0,75 m high. Leaves mostly 2,5–4,0 mm broad. Anthers mostly 5,0–8,5 mm long, rarely 4,5 mm. Perianth tube 6,0–12,5 mm long. Tepals subequal, 12–16(–18) $\times$ 4–5 mm. *Flowers bright magenta-pink; January to April.* Moist, open grassland. *Lavranos 15265.*

W S C N E

bulbifera Baker

Cormous herb. Stems trailing, up to 300 mm long. Plants bearing a cormlet in axil of 1 to several stem nodes. Perianth tube 9–15 mm long, recurved, shorter than bracts and emerging between them. *Flowers pale creamy white, tinged with lilac or pink; May to July.* Moist, shady, montane habitats, on steep slopes or on cliffs. *Germishuizen 243.*

W S C N E

candida Baker

Cormous herb, up to 300 mm tall. Perianth tube (7–)9–16 mm long. Upper part of leaves often withered or missing. Raised midrib hemispherical in outline. *Flowers white or palest pink to pale lilac-mauve; March to April.* Grassland, bushveld, rock ledges, between boulders. *Speedy sub PRE 36262.*

W S C N E

glareosa Hilliard & B.L. Burt

Cormous herb, up to 200 mm tall. Leaves 0,75–1,50 (–2,00) mm broad. Anthers 3,5–6,5 mm long. Midrib

rounded in outline. *Flowers bright pink; January to March.* Damp turf around and between rock sheets, marshy turf, in silty and gravelly places. *Galpin 14329.*

W S C N E

hygrophila Hilliard & B.L. Burt

Cormous herb, up to 0,75 m high. Perianth tube 5–7 mm long. Seeds about as long as broad. Outer bracts 9,5–15,0 mm long, green often tipped reddish. *Flowers snow-white or more rarely slightly creamy; February to March.* Grassy marshes, marshy ground over flat rocks, wet grassy hills. *Mauve 4210.*

W S C N E

longicollis Baker

(= *H. sabiensis* N.E. Br. ex R.C. Foster,
= *H. widneri* Beauv.)

Cormous herb, up to 300 mm tall. Perianth tube curved, 20–30 mm long with a reddish tinge. Spike few-flowered with flowers laxly spaced. Flower bracts erect to patent. *Flowers wine-red and white; August to September.* Grassland. *Van Hoepen sub PRE 30460.*

W S C N E

radiata (Jacq.) Ker Gawl.

(= *Ixia radiata* Jacq.)

Cormous herb, up to 0,6 m high. Bract united round stem for $\pm$ half its length. Spike 6–15-flowered. Perianth tube curved, 10–18 mm long, slightly exceeding bracts. *Flowering October to December.* Grassland, streambanks. *Devenish 718.*

W S C N E

rupestris N.E. Br. ex R.C. Foster

Cormous herb, up to 500 mm tall. Spike lax, distichous, 6–8-flowered. Perianth tube 7 mm long, straight. Tepals subequal, $14 \times 2,5$ –3,0 mm. *Flowers pink and white; January to February.* Marshy grassland. *Codd 5172.*

W S C N E

schlechteri (Baker) R.C. Foster

(= *Geissorhiza schlechteri* Baker)

Cormous herb, up to 300 mm tall. Basal leaves 3 or 4, linear, erect. Spike lax, 4–6-flowered. *Flowers bright to dark pink outside, inside magenta-pink; January.* Mountain grassland. *Marais 43.*

W S C N E

similis R.C. Foster

Cormous herb, up to 400 mm tall. Basal leaves 4 or 5, 60–380 mm long. Spike lax, distichous, 2–6-flowered. Perianth tube 5–6 mm long, straight. *Flowers pink or light purple; March to May.* Moist, mountain grassland. *Van der Schijff 4382.*

W S C N E

Homeria Vent. (s. Afr.: 32 spp.) 1277000

Goldblatt. 1981 Ann. Mo. bot. Gdn. 68: 413–503.
Goldblatt. 1991. Contr. Bolus Herb. 13: 1–74.
Goldblatt. 1993. F.Z. 12,4: 27.

pallida Baker

(= *H. glauca* Wood & Evans,
= *H. pura* N.E. Br.)

Geophyte, up to 400 mm tall. Outer tepals 18–25 mm long, 5–9 mm wide. Corm 10–20 mm in diameter with black, reticulate tunics. Leaf solitary, basal, falcate or erect. *Flowers yellow and dark yellow and green; August to October.* Grassland. *Scheepers 1602.*

W S C N E

Lapeirousia Pourr. (s. Afr.: 29 spp.) 1314000

Goldblatt. 1990. Ann. Mo. bot. Gdn. 77: 430–484.
Goldblatt. 1993. F.Z. 12,4: 28–40.

bainesii Baker

Geophyte, up to 0,6 m high. Usually repeatedly branched. Perianth tube long, usually up to 34 mm, cylindric. Tepals subspathulate. Inflorescence a pseudopanic, branching divaricate, with 1 or rarely 2 flowers. *Perianth white or pale mauve with pink to red markings near base of lower tepals; May.* Bushveld. *Scheepers 1602. Codd 8367.*

W S C N E

littoralis Baker subsp. **caudata** (Schinz) Goldblatt

(= *L. caudata* Schinz subsp. *caudata*)

Cormous herb, up to 300 mm tall. Perianth tube (25–) 30–45(–70) mm long. Tepals 1,3–3,0 mm at widest, 18–30 mm long. Flowers without markings on lower tepals. Bracts 10–18(–23) mm long. Spike 8–12-flowered. *Flowers white to cream, greenish yellow or light purplish brown; December to March.* Bushveld. *Van Wyk 2680.*

W S C N E

masukuensis Vaupel & Schltr.

Geophyte, up to 0,6 m high. Ultimate inflorescence branches bearing 5–9 apically crowded flowers. *Perianth tube cylindric, up to 25 mm long; greenish or blue-violet with red to purple markings on lower tepals; December to May.* Bushveld, in grass. *Zambatis 737.*

W S C N E

plicata (Jacq.) Diels subsp. **plicata**

Geophyte. Basal leaf 50–200 $\times$ 1–3 mm, conspicuously ribbed, linear, falcate, margins smooth. True bracts as long as flowers or much longer, usually recurved or falcate. Perianth segments shorter than 10 mm. *Flowering June.* Grassland. *Burt Davy 14178.*

W S C N E

sandersonii Baker

Cormous herb, up to 350 mm tall. Perianth tube 15–20(–25) mm long. Leaves 1–3 mm wide. Inflorescence much-branched, branches $\pm$ divaricate but unequal and a main axis evident, ultimate branches 1- or 2-(3-)flowered. Lower 3 tepals each with a deep red to purple and white spear-shaped nectar guide. *Flowers blue to violet; December to April.* Rocky hillsides, ridges and summits. *Galpin 13369.*

W S C N E

Moraea Mill. (s. Afr.: 101 spp.) 1265000

Goldblatt. 1986. Ann. Kirstenb. 14.
Goldblatt. 1993. F.Z. 12,4: 13–24.

brevistyla (Goldblatt) Goldblatt

(= *M. pubiflora* N.E. Br. subsp. *brevistyla* Goldblatt)

Cormous herb, up to 350 mm tall. Filaments 6–7 mm long. Style branches about 4 mm long, crests linear, 2–3 mm long. Outer tepals about 20 mm long. Inner tepals upright with long lateral cusps obtuse and slender, acute central cusp curving outwards in a wide arc. *Flowers white, inner tepals, claws and nectar guides yellow with brown spots; November to March.* Grassland, often near streams. *Devenish 234.*

W	S	C	N	E
---	---	---	---	---

elliottii Baker

Cormous herb, up to 0,55 m high. Outer and inner tepal limbs reflexed. Style branches broad and flat. Crests prominent. *Flowers blue-violet with yellow to orange nectar guides on outer tepals; December to May.* Moist grassland, especially in montane habitats where it grows in thin rocky soils. *Krynauw 268.*

W	S	C	N	E
---	---	---	---	---

galpinii (Baker) N.E. Br.

Cormous herb, up to 300 mm tall. Cataphylls of mature plants split regularly into rigid, blackish fibres and innermost cataphyll not forming an open network above. Leaves slender, up to 2,5 mm in diameter. *Flowers bright yellow with slightly darker yellow nectar guides, outlined with dark spots on outer tepals; August to October.* Open, low grassland, rock outcrops, rocks along streambanks. *Mauve 4802.*

W	S	C	N	E
---	---	---	---	---

huttonii (Baker) Oberm.

(= *M. rivularis* Schltr.)

Cormous herb, up to 1 m high. Style crests marked with a single, dark brown to purple blotch at base. Inner tepals erect. Leaf long, strap-like. *Flowers yellow with deeper yellow nectar guides on outer tepals; October to December.* Running streams. *Du Toit 108.*

W	S	C	N	E
---	---	---	---	---

marionae N.E. Br.

Cormous herb, up to 300 mm tall. Inner tepals tricuspidate with short, obtuse, lateral lobes and a long central cusp, longer than 10 mm, extending above level of stigmas. *Flowers white to pale blue, marked with lilac veins; August to October.* Grassland. *Galpin 467*

W	S	C	N	E
---	---	---	---	---

modesta Killick

Cormous herb, up to 200 mm tall. Inner tepals reduced to tiny trifid or linear cusps, 3–6 mm long. Outer tepals 20–27 mm long, claw nearly erect. *Flowers white to pale blue-mauve, inner tepals and style crests usually dark purple, nectar guides yellow; September to November.* Mountain grassland. *Drews 34.*

W	S	C	N	E
---	---	---	---	---

moggii N.E. Br. subsp. **moggii**

Cormous herb, up to 0,7 m high. Leaf greyish green, glaucous, 4–10 mm wide, not ribbed when fresh. Cataphylls firm, dark brown above, paler and veined below. *Flowers yellow, veined purple-brown; February to April.* Open grassland, in exposed, well-drained sites. *Hemm 279.*

W	S	C	N	E
---	---	---	---	---

moggii N.E. Br. subsp. **albescens** Goldblatt

Cormous herb, up to 0,7 m high. Leaf light green, up to 15 mm wide, veins occasionally prominent, even in fresh material. Cataphylls firm to submembranous, purple or brown. *Flowers white, cream or sometimes yellow, veined green, light brown; December to February.* Open grassland. *Mauve & Toelken 4524.*

W	S	C	N	E
---	---	---	---	---

muddii N.E. Br.

Cormous herb, up to 350 mm tall. Plant with 2 or more sheathing bracts present. Tunics of pale straw-coloured fibres. Cataphylls brown, usually broken vertically into irregular strips. Leaf solitary, linear, 3–6 mm wide. *Flowers cream to yellow with deeper, yellow nectar guides on outer tepals; September to December.* Open grassland, in peaty or stony soil. *Codd 4420.*

W	S	C	N	E
---	---	---	---	---

natalensis Baker

Cormous herb, up to 450 mm tall. Stem erect or inclined, lowermost internode very long with leaf at first node, internodes above leaf shorter. *Flowers lilac to blue-violet with yellow nectar guides ringed with dark mauve on outer tepals; December to January.* Wet, exposed sites along rocky streambanks, in seeps, vleis, rock outcrops. *Onderstall 1393.*

W	S	C	N	E
---	---	---	---	---

polystachya (Thunb.) Ker Gawl.

Cormous herb, up to 0,8 m high. Outer tepals 36–50 mm long. Ovary 6–10 mm long, usually exerted from spathes. Leaves linear, 6–12(–20) mm wide. *Flowers violet to pale blue with yellow to orange nectar guides on outer tepals; February to April.* Open areas. *Codd 9235.*

W	S	C	N	E
---	---	---	---	---

pubiflora N.E. Br.

Cormous herb, up to 0,75 m high. Filaments 13–15 mm long. Outer tepals 25–30 mm long. Inner tepals tricuspidate, divided into 3 subequal, slender lobes. Reverse of large outer tepals scabrid to pubescent. *Flowers*

white, speckled green to brown on inner tepals and claws and nectar guides of outer tepals; December to March. Mountain grassland. Mohle 192.

W S C N E

robusta (Goldblatt) Goldblatt

(= *M. galpinii* (Baker) N.E. Br. subsp. *robusta* Goldblatt)

Cormous herb, up to 400 mm tall. Cataphylls of mature plant split regularly into rigid, blackish fibres and innermost cataphyll not forming an open network above. Leaves thick, 4–10 mm in diameter. Flowers pale yellow to white; November to December. Mountain grassland. Devenish 109.

W S C N E

spathulata (L.f.) Klatt

(= *M. spathulata* (L.f.) Klatt subsp. *saxosa* Goldblatt,

= *M. spathulata* (L.f.) Klatt subsp. *transvaalensis* Goldblatt)

Cormous herb, up to 0.9 m high. Plants usually in clumps. Leaf flat above, 15 mm wide. Cataphylls usually dark brown and often unbroken. Flowers yellow with deep yellow nectar guides; November to February. Open grassland, edge of forest or thickets, among rocks. Codd 9487.

W S C N E

stricta Baker

(= *M. mossii* N.E. Br.,

= *M. trita* N.E. Br.)

Cormous herb, up to 250 mm tall. Plant leafless when in bloom. Style crests present, at least 2 mm long and acute. Inner tepals longer than 10 mm. Lateral branches short to sessile. Flowers pale lilac to blue-violet with yellow-orange spotted nectar guides on outer tepals; July to November. Open, often stony grassland. Hanekom 1826.

W S C N E

thomsonii Baker

Cormous herb, up to 300 mm tall. Green leaf lacking at flowering time. Flower with inner and outer tepals similar. Style crests reduced and vestigial, shorter than stigma lobes. Flowers pale lilac-blue with tepals having yellow nectar guides at base of limbs. No specimens in PRE.

W S C N E

trifida R.C. Foster

(= *M. culmea* Killick,

= *M. rogersii* N.E. Br.)

Cormous herb, up to 0.55 m high. Outer tepals reflexed, 15–20 × 6–10 mm. Inner tepals trilobed with central lobe long and slender, lateral lobes much smaller and obtuse. Flowers creamy yellow with brown to green markings; November to March. Moist grassland, often along seeps and streambanks. Devenish 2021.

W S C N E

Radinosiphon N.E. Br. (s. Afr.: 1 sp.) 1311040

Brown. 1932. Trans. Roy. Soc. S. Afr. 20: 262.

Carter. 1962. Flower. Pl. Afr. 35: t. 1384.

Goldblatt. 1993. F.Z. 12,4: 65.

leptostachya (Baker) N.E. Br.

(= *Lapeirousia leptostachya* Baker,

= *R. lomatiensis* (N.E. Br.) N.E. Br.)

Geophyte, up to 0.7 m. Leaves several, the lower 2 or 3 membranous and entirely sheathing; foliage leaves narrowly lanceolate, plane with slightly raised midrib and margins. Inflorescence a second spike. Perianth tube longer than tepals. Style branches filiform throughout. Flowers pink to purple; December to March. Rocky grassland, often among boulders and cliffs in mountainous areas. Codd 9488.

W S C N E

Romulea Maratti (s. Afr.: 72 spp.) 1261000

De Vos. 1983. F.S.A. 7,2: 10–73.

Goldblatt. 1993. F.Z. 12,4: 63–64.

camerooniana Baker

(= *R. campanuloides* Harms,

= *R. campanuloides* Harms var. *gigantea* (M.P. de Vos) M.P. de Vos)

Geophyte, up to 120 mm tall, excluding leaves. Leaves terete, or oval in transverse section, with 4 longitudinal grooves, all inserted below ground. Inflorescences with flowers solitary on aerial axes. Perianth tube shorter than tepals. Flowers lilac to violet, white to yellow in centre, tepals darkly veined; December to March. Montane grassland, amongst rocks. Jacobsen & Clinning 56.

W S C N E

Schizostylis Backh. & Harv. (s. Afr.: 1 sp.) 1299000

Baker. 1896. F.C. 6: 56.

Goldblatt. 1993. F.Z. 12,4: 62.

coccinea Backh. & Harv.

(= *S. pauciflora* Klatt)

Perennial herb, up to 0.75 m high. Rhizomatous. Leaves linear, grasslike, furnished with a distinct midrib. Flowers 6–8, arranged in a lax distichous spike; bright pinkish red; November to April. Marshy grassland, streambanks and riverbanks. Germishuizen 2947.

W S C N E

Syringodea Hook. f. (s. Afr.: 8 spp.) 1260000

De Vos. 1983. F.S.A. 7,2: 1–9.

bifucata M.P. de Vos

(= *S. bicolor* Baker)

Geophyte with leaves up to 200 mm long. Corm with a very small ridge on a pointed base. Leaves several, filiform, 60–200 × 0.5–1.5 mm. Throat of perianth yellow or orange-yellow. Flowers 65–100 mm long,

tube 45–70 mm long, pale to bright violet and orange-yellow; March. Grassland. Davidson 3108.

W S C N E

Tritonia Ker Gawl. (s. Afr.: 27 spp.) 1306000

De Vos. 1982. Jl S. Afr. Bot. 48: 105.

De Vos. 1983. Jl S. Afr. Bot. 49: 347–422.

disticha (Klatt) Baker subsp. **rubrolucens** (R.C. Foster)

M.P. de Vos

(= *T. rubrolucens* R.C. Foster)

Geophyte, up to 0,8 m high. Outer bracts 3-toothed, middle tooth sometimes reduced, or irregularly toothed, or lower ones sometimes acute, not elongating after flowering. Flowers 25–35 mm long, red, orange or pink; January. Grassland. Devenish 416.

W S C N E

lineata (Salisb.) Ker Gawl. var. **lineata**

(= *T. flavida* Schltr.,

= *T. kraussii* Baker)

Geophyte, up to 0,6 m high. Leaves more than 150 × 5 mm, suberect or spreading, linear-lanceolate, usually not reaching base of spike, often drying brown with pale veins. Flowers cream, straw-coloured or pale yellow, usually with dark veining; October to November. Grassland. Devenish 103.

W S C N E

nelsonii Baker

(= *T. petrophila* Baker)

Geophyte, up to 0,9 m high. Perianth tube (10–)14–18 mm long. Leaves striate, suberect or slightly spreading, linear, acuminate, firm, 450–900 × 1,5–4,0 (–6,0) mm. Flowers light flame- to bright orange-red or bright red with a high greenish yellow callus on each anticonic perianth segment; December to March. Rocky grassland. Codd 2660.

W S C N E

Watsonia Mill. (s. Afr.: 45 spp.) 1315000

Goldblatt. 1989. Ann. Kirstenb. 19.

bella N.E. Br. ex Goldblatt

Cormous herb, up to 0,6 m high. Anthers 5–6 mm long. Spike 2–10-flowered. Bracts dry and brown, 10–16 mm long, nonoverlapping. Habit slender. Tepals lanceolate, distinctly apiculate, 15–18 × 6–8 mm. Flowers pink to purple; December to January. Grassland, lower slopes of hills. Plowes 2382.

W S C N E

latifolia N.E. Br. ex Oberm.

Cormous herb, up to 1,5 m high. Leaves broad, 50–90 mm wide, little thickened and hyaline on midrib and margins. Perianth tube with lower part 15–25 mm long, upper part

18–20 mm long, 5–6 mm wide. Flowers maroon-red; December to March. Open grassland, thin rocky soil or around bases of granite outcrops. Codd 9497.

W S C N E

occulta L. Bolus

Cormous herb, up to 400 mm tall. Lower part of perianth tube at least 30 mm long, included in bracts. Bracts herbaceous, 33–55 mm long. Spike 3–7-flowered. Flowers pale pink; November to January. Mountain grassland. Galpin 13346.

W S C N E

pulchra N.E. Br. ex Goldblatt

Cormous herb, up to 1,2 m high. Plants growing in clumps. Internodes of spike 4–8 mm long. Tepals 16–25 mm long. Spike 30–60-flowered. Bracts dry, dark brown. Flowers pink to purple or maroon; December to March. Grassland and woodland. Codd 9527.

W S C N E

strubeniae L. Bolus

(= *W. alpina* G. Lewis,

= *W. transvaalensis* Baker var. *drakensbergensis* L. Bolus)

Cormous herb, up to 1 m high. Tepals 16–19 mm long. Stem frequently branched. Leaves broad, 14–20 mm wide. Main spike 25–35-flowered. Upper perianth tube 7–9 mm long. Floral bracts dry. Flowers pale pink; February to May. Grassland. Codd 6445.

W S C N E

transvaalensis Baker

Cormous herb, up to 500 mm tall. Tepals lanceolate, markedly attenuate, 20–25 mm long. Stem always unbranched. Bracts narrow with pale margins which do not or hardly clasp stem. Leaves 8–20 (–25) mm wide. Flowers deep pink; January to April. Mountain grassland, often rocky situations. Meeuse 9812.

W S C N E

watsonioides (Baker) Oberm.

(= *Tritonia watsonioides* Baker,

= *W. flavida* L. Bolus)

Cormous herb, up to 1 m high. Basal leaves 1 or 2, linear with heavily thickened margins, midribs raised and thickened, 3–6 mm wide. Perianth with lower part 8–9 mm long. Tepals oblanceolate, 10–18 × 5–7 mm. Flowers pale yellow to cream or maroon; December to March. Grassland, rocky situations. Devenish 460.

W S C N E

wilmsii L. Bolus

Cormous herb, up to 0,75 m high. Lower part of perianth tube at least 30 mm long, partly exerted. Bracts dry and brown with pale margins. Spike with more than 15 flowers. Flowers deep pink; December to April. Rocky, mountain grassland. Codd 5176.

W S C N E

JUNCACEAE

Marsh or aquatic herbs, tufted, rhizomatous. Stems erect, woody, bearing terminal leaf rosettes. Leaves grass- or rush-like, filiform, linear to narrowly lanceolate and soft, or terete, hard, often septate or reduced to open or tubular sheaths. Flowers bisexual, small, regular. Perianth with 3 outer and 3 inner segments, subsimilar. Stamens 6, hypogynous. Ovary superior, 1- or 3-locular. Fruit a capsule.

Key after Obermeyer in F.S.A. 4,2: 71 (1985).

Leaves glabrous; leaf sheaths usually open; flowers in decompound inflorescences to much reduced, single capitula; capsules many-seeded **Juncus**
 Leaves with long, soft, inconspicuous, scattered hairs; leaf sheaths closed; flowers in an oblong, compact head; capsules 3-seeded **Luzula**

Juncus L. (s. Afr.: 21 spp.)

0936000

Obermeyer. 1985. F.S.A. 4,2: 73–88.

capitatus Weigel

Small, tufted annual herb, up to 80 mm tall. Plants with capitulum pseudolateral. Stamens 3. Subtending bract exserted, forming continuation of stem. Leaves many, narrowly linear. *Flowers green; June. Vleis. Mauve & Venter 5068.*

W S C N E

dregeanus Kunth

(= *J. subcuneatus* Adamson,
= *J. subglobosus* Adamson)

Compact, tufted perennial herb, up to 400 mm tall. Inflorescences terminal panicles. Capitula dense to few-flowered. Leaves grass-like, linear-acuminate to filiform, many, basal. *Flowers brown. Swamps, vleis, lakes, pans. Theron 2485.*

W S C N E

effusus L.*

Tufted, perennial herb, up to 1 m high; stems with continuous pith. Leaves cylindric, cauliform, surrounded below by sheathing cataphylls, 70–170 mm long. Tepals 2 mm long, spreading. Stamens 3. Capsule obtuse, thin. *Flowers green; November to January. Swamps, river and streambeds. Cosmopolitan. Behr 156.*

W S C N E

exsertus Buchenau

(= *J. rostratus* Buchenau)

Tufted, perennial herb, up to 0,8 m high. Flowering stem with 3–5 leaves. Capsule unilocular, cylindrical, beaked, exserted from perianth. Medulla of stem with a central cavity only. *Flowers reddish brown; September to May. Grassland, riverbanks, marshes. Turner 1386.*

W S C N E

lomatophyllus Spreng.

(= *J. cymosus* Lam.,
= *J. viridifolius* Adamson)

Perennial herb with spreading to decumbent, densely leafy stolons. Flowers in dense to few-flowered capi-

tula arranged in terminal panicles. Leaves broad, soft, flat, rosulate. Plants repent. *Flowers dark; September to January. Streambanks and riverbanks, permanently wet, montane habitats. Mauve & Venter 5200.*

W S C N E

oxycarpus E. Mey. ex Kunth

(= *J. brevistylus* Buchenau,
= *J. gentilis* N.E. Br.)

Tufted, perennial herb, up to 0,8 m high. Flowering stem with 3–5 leaves, basal and cauline. Capsule unilocular, ovoid, obtuse, enclosed in perianth. Medulla of stem with a central cavity only. *Flowers brown; October to May. Streambanks, swamps. Mauve 5051.*

W S C N E

punctorius L.f.

Tufted, perennial herb, up to 1,5 m high. Flowering stem pale green, with 2 or 3 basal sheaths and 1 leaf arising near middle. Capsule 3-locular. Medulla of stem consisting of a central and lateral air space. *Flowers light brown; October to January. Rivers, streams, marshes. Coetzee 280.*

W S C N E

rigidus Desf.

(= *J. arabicus* (Asch. & Buchenau) Adamson)

Tufted, perennial herb, up to 1,5 m high. Inflorescence more loosely branched, with flowers 1 to few on shorter and longer side branchlets. Capsule exserted. Seed appendaged. *Flowers yellowish brown. Brackish areas, salt pans. Louw 1145.*

W S C N E

tenuis Willd.

Tufted, perennial herb, up to 400 mm tall. Leaves narrowly linear-acuminate, grass-like. Inflorescences loose terminal panicles. Tepals spreading, overtopping capsules. *Flowers green; December. Forest, along streams. Kluge 1530.*

W S C N E

Luzula DC. (s. Afr.: 1 sp.)

0937000

Obermeyer. 1985. F.S.A. 4,2: 91.

africana Drège ex Steud.

Tufted, grass-like, annual or perennial herb, up to 400 mm tall. Leaves with long, soft, inconspicuous, scattered hairs. Leaf sheaths closed. Flowers in a long,

compact head. Capsules 3-seeded. *Flowers brown; September to October.* Grassland, vleis, streambanks. *Drews 42.*

W	S	C	N	E
---	---	---	---	---

LEMNACEAE

Small to minute, aquatic herbs forming a free-floating, usually solitary, discoid, oblong, strap-shaped or globular body (frond); usually monoecious. Annual fronds changing to turions under unfavourable conditions. Flowers rarely produced. Fruit a utricle.

Key after Dyer, Gen. 2: 896 (1976).

- | | | | |
|----|-----------------------------------|-------|------------------|
| 1a | Roots absent; plants globular | | Wolffia |
| 1b | Roots present | | 2 |
| 2a | With several, usually short roots | | Spirodela |
| 2b | With 1, usually long root | | Lemna |

Lemna L. (s. Afr.: 3 spp.)

0795000

Landolt. 1980. Veröff. Geobot. Inst. ETH 70.

Landolt. 1986. Monograph. Veröff. Geobot. Inst. ETH 71.

aequinoctialis Welw.

(= *L. angolensis* (Welw.) Hegelm.,
= *L. paucicostata* Hegelm.)

Aquatic herb. Seeds with 8–22 prominent ribs, brown, falling out of fruit wall when ripening. Fronds with only 1 prominent papule above node. Pans, marshes. *Van Wyk 3365.*

W	S	C	N	E
---	---	---	---	---

gibba L.

Aquatic herb. Fronds bulbous below, without prominent papules at apex. Wing of fruit 0,1–0,2 mm wide. Dams, pools. *Haynes sub PRE 31710.*

W	S	C	N	E
---	---	---	---	---

minor L.

Aquatic herb. Root sheath not winged. Root tip mostly rounded. Roots often longer than 30 mm. Fronds often red below, or with red spots on either side, ± round. Dams, pools. *Mauve, Verdoorn & Vahrmeijer 4309.*

W	S	C	N	E
---	---	---	---	---

Spirodela Schleid. (s. Afr.: 2 spp.)

0794000

Landolt. 1980. Veröff. Geobot. Inst. ETH 70.

Landolt. 1986. Monograph. Veröff. Geobot. Inst. ETH 71.

punctata (G. Mey.) Thompson

(= *S. oligorrhiza* Kurz)

Aquatic herb. Plants small, floating, discoid with (1–) 3–18 fairly short, clustered roots. Fronds narrow-oblong, often ringed with red. Dams, pools. *Mauve, Verdoorn & Vahrmeijer 4310.*

W	S	C	N	E
---	---	---	---	---

Wolffia Horkel ex Schleid. (s. Afr.:

2 spp.)

0796000

Landolt. 1980. Veröff. Geobot. Inst. ETH 70.

Landolt. 1986. Monograph. Veröff. Geobot. Inst. ETH 71.

arrhiza (L.) Horkel ex Wimm.

Aquatic herb. Fronds globoid to ovoid, 1,0–1,5 times as deep as wide, greatest width below water surface, intensely green on upper side, with 10–100 stomata. Dams, pools. *Crous sub PRE 31707.*

W	S	C	N	E
---	---	---	---	---

LILIACEAE

(including Alliaceae, Anthericaceae, Asparagaceae, Asphodelaceae, Colchicaceae, Dracaenaceae, Eriospermaceae, Hyacinthaceae, Liliaceae sens. str., Luzuriagaceae and Smilacaceae)

Herbs or shrubs with bulbs, corms, rhizomes or thick fleshy roots. Leaves spirally set, mostly basal, often linear or sword-shaped, often succulent; small and reduced to scales or spines with green and needle-like stem (cladodes). Inflorescence variable but not umbel-like. Flowers regular or rarely irregular. Perianth segments 3 + 3, free or united. Stamens 6. Ovary superior, 3-locular. Fruit a capsule or a berry. Seeds mostly black.

Keys after Dyer, Gen 2: 916–919 (1976).

Key to groups

- 1a Underground parts a bulb, rarely with loose scales; geophytes **Group B**
 1b Underground parts a rhizome, tuber, corm or rarely a primitive bulb; geophytes, shrubs, trees, scandent or succulent **2**
 2a Fruit a capsule **Group A**
 2b Fruit a berry or pome **Group C**

GROUP A

(Alliaceae, Anthericaceae, Asphodelaceae, Colchicaceae, Eriosemaceae)

- 1a Leaves cauline, alternate on usually scandent, annual stems, herbaceous or leathery, not succulent; flower solitary, with a leaf placed beside it, or unattended; leaf apex cirrhiferous **2**
 1b Leaves basal, rosulate or distichous, or on peduncles, or on annual or perennial stems, herbaceous or succulent; flowers variously arranged; leaf apex not cirrhiferous **4**
 2a Perianth segments fused; tube campanulate **Sandersonia**
 2b Perianth segments free **3**
 3a Perianth segments recurved; style at right angles to ovary **Gloriosa**
 3b Perianth segments not recurved; style straight **Littonia**
 4a Perianth segments free or connate at base, spreading, erecto-patent or campanulate **5**
 4b Perianth tubular, usually with short, erect or erecto-patent lobes **13**
 5a Underground part a deep-seated corm, oblique at base, new corm arising from one side and forming a broad foot below from which roots radiate; perianth segments and attached, decurrent stamens being shed together; small geophytes **6**
 5b Underground part a fibrous or tuberous rhizome, or plants suffrutescent or arborescent, with fibrous or swollen roots **9**
 6a Flowers in a capitulum overtopped by exterior green or petaloid bracts **Androcymbium**
 6b Flowers not in a capitulum **7**
 7a Perianth persistent; ovary with 3 long, spreading styles **Ornithoglossum**
 7b Perianth caducous; ovary with a short or long style **8**
 8a Filaments filiform; style very short; stigmas 3, revolute, papillate **Iphigenia**
 8b Filaments with a thick bulge in middle; style long; stigma terminal **Camptorrhiza**
 9a Seeds woolly; plants with branched or unbranched tubers **Eriosemum**
 9b Seeds glabrous; plants rhizomatous or suffrutescent; roots often swollen, variously fused, or fibrous with random swellings **10**
 10a Perianth persistent **11**
 10b Perianth caducous; segments cohering above when faded, circumscissile below **12**
 11a Capsule rounded, rarely beaked; seeds small, angled through pressure **Anthericum**
 11b Capsule deeply 3-lobed; seeds discoid with a pointed hilum, black **Chlorophytum**
 12a Perianth usually yellow, rarely white; filaments densely bearded **Bulbine**
 12b Perianth usually white, rarely yellow or pink; filaments retrorsely scabrid **Trachyandra**
 13a (4) Flowers spicate or racemose; plants usually with succulent leaves **14**
 13b Flowers umbellate; leaves often deciduous in winter, herbaceous **18**
 14a Inflorescence terminal, usually a simple, dense spike; leaves basal, soft, immaculate **Kniphofia**
 14b Inflorescence apparently axillary, various; leaves various, usually succulent, hard, thick, prickly, maculate or immaculate, in basal or apical rosettes or cauline **15**
 15a Flowers bilabiate, rarely regular; in laxly flowered racemes or panicles, usually small (up to 10–20 mm long) and dull coloured **16**
 15b Flowers regular, rarely bilabiate, usually brightly coloured, 10–30 mm long, in many-flowered inflorescences **17**
 16a Capsule apically rounded or obtuse. Underground parts rhizomatous, if rarely bulbous then flowers usually shorter than 15 mm; actinomorphic **Haworthia**
 16b Capsule apically acuminate. Underground parts bulbous. Flowers usually shorter than 15 mm; zygomorphic **Chortolirion**
 17a Perianth straight **Aloe**
 17b Perianth curved, sometimes bulbous-based, pendulous, usually with a comparatively long pedicel **Gasteria**
 18a Plant with bulbs producing numerous bulbils; flowers white **Nothoscordum**
 18b Plant not as above **19**
 19a Perianth without a corona or appendages, blue or white **Agapanthus**
 19b Perianth with a corona or appendages, variously coloured **Tulbaghia**

GROUP B(Hyacinthaceae, Liliaceae *sens. str.*)

- 1a Plants leafless (leaves fugacious), with erect or voluble, branched, green flowering stems (inflorescence); bract spurred, usually early caducous **2**
 1b Plants with leaves (these occasionally hysteroanthous) with erect, simple spikes, racemes, corymbs or capitula **3**

2a	Perianth segments caducous, cohering above when faded, circumscissile below	Schizobasis
2b	Perianth segments persistent, free and reflexed in fruit	Bowiea
3a	Bracts, at least the lower, spurred, usually early caducous; perianth caducous, cohering apically, circumscissile below when faded; seeds flattened, shiny, with a loose testa; leaf or leaves often hysteranthous	4
3b	Bracts not spurred, usually persistent; perianth caducous or persistent; seeds globose, angular or flat, testa firm; leaf or leaves usually contemporary with inflorescence	7
4a	Plants 20–60 mm high, dwarf; flowers solitary or 2-nate, tubular; stamens included, subsessile	Litanthus
4b	Plants 0.1–1.5 m high; many-flowered; stamens exerted	5
5a	Filaments forming a cage below, i.e. converging centrally, free apically; plants hysteranthous; flowers nocturnal	Thuranthos
5b	Filaments free, spreading, or erect and connivent	6
6a	Perianth segments usually free or fused near base; stamens spreading	Urginea
6b	Perianth segments usually fused, forming a tube with reflexed lobes; stamens usually erect, connivent	Drimia
7a	Perianth segments free or fused near base, stellate or campanulate, not tubular	8
7b	Perianth with a cylindrical tube, or if campanulate, plant with 2 opposing basal leaves	14
8a	Inflorescence topped with a coma of green bracts	Eucomis
8b	Inflorescence not as above	9
9a	Three inner perianth segments erect, cucullate, enclosing 3–6 stamens and ovary; outer segments spreading	Albuca
9b	Inner and outer perianth segments spreading	10
10a	Flowers large, perianth segments 120–150 mm long	Lilium
10b	Flowers small, perianth up to 30 mm long	11
11a	Inflorescence central; ovules axile, many; leaves immaculate	12
11b	Inflorescence axillary; ovules 2 in each locule, basal; leaves often spotted	13
12a	Flowers blue or white, never yellow; bracts 2 per flower, decurrent	Scilla
12b	Flowers white, yellow, orange or green, never blue; bracts 1 per flower, not decurrent	Ornithogalum
13a	Perianth campanulate; ovary sessile	Drimiopsis
13b	Perianth usually with reflexed segments; ovary stipitate	Ledebouria
14a	Plants 0.5–1.0 m high with fairly large pendulous flowers, 25–40 mm long; leaves many, rosulate	15
14b	Plants smaller, with 1–many leaves; perianth various, shorter than 25 mm	16
15a	Perianth tube cylindrical, limb campanulate; pedicels long, recurved	Galtonia
15b	Perianth cylindrical, lobes straight	Dipcadi
16a	Seeds discoid; flowers dull green or brown, usually many, small, in a second raceme, pendulous	Dipcadi
16b	Seeds globose or pear-shaped; flowers various	17
17a	Inflorescence a corymb; bracts small	Neobakeria
17b	Inflorescence a capitulum surrounded at base by large bracts forming an involucre	Massonia

GROUP C

(Asparagaceae, Dracaenaceae, Luzuriagaceae, Smilacaceae)

1a	Flowers unisexual; plants dioecious; leaves with 2 basal tendrils; prickly climbers	Smilax
1b	Flowers bisexual; leaves without tendrils	2
2a	Climbers with flowers arranged in axillary cymes; leaves reticulate-veined	Behnia
2b	Shrubs, trees or rhizomatous herbs and scramblers, if climbers then leaves not markedly reticulate-veined	3
3a	Leaves reduced to scales, with a spinous or soft spur; cladodes leaf-like or needle-shaped	Asparagus
3b	Leaves well developed	4
4a	Trees or shrubs; leaves in dense apical rosettes or cauline, usually herbaceous; inflorescence paniculate	Dracaena
4b	Rhizomatous herbs, rarely short-stemmed; leaves basal, distichous, usually thick and fibrous; inflorescence a dense, cylindrical raceme	Sansevieria

As shown above, the Liliaceae is divided into a number of smaller families by Dahlgren, Clifford & Yeo (1985) in The families of the monocotyledons. The genera of the Liliaceae in the area are represented in these families as follows:

Alliaceae	<i>Agapanthus</i> , <i>Nothoscordum</i> , <i>Tulbaghia</i>
Anthericaceae	<i>Anthericum</i> , <i>Chlorophytum</i>
Asparagaceae	<i>Asparagus</i>
Asphodelaceae	<i>Aloe</i> , <i>Bulbine</i> , <i>Chortolirion</i> , <i>Gasteria</i> , <i>Haworthia</i> , <i>Kniphofia</i> , <i>Trachyandra</i>
Colchicaceae	<i>Androcymbium</i> , <i>Camptorrhiza</i> , <i>Gloriosa</i> , <i>Iphigenia</i> , <i>Littonia</i> , <i>Ornithoglossum</i> , <i>Sandersonia</i>
Dracaenaceae	<i>Dracaena</i> , <i>Sansevieria</i>

Eriospermaceae	<i>Eriospermum</i>
Hyacinthaceae	<i>Albuca</i> , <i>Bowiea</i> , <i>Dipcadi</i> , <i>Drimia</i> , <i>Drimiopsis</i> , <i>Eucomis</i> , <i>Galtonia</i> , <i>Ledebouria</i> , <i>Litanthus</i> , <i>Massonia</i> , <i>Neobakeria</i> , <i>Ornithogalum</i> , <i>Schizobasis</i> , <i>Scilla</i> , <i>Thuranthos</i> , <i>Urginea</i>
Liliaceae	<i>Lilium</i>
Luzuriagaceae	<i>Behnia</i>
Smilacaceae	<i>Smilax</i>

Agapanthus *L'Hér.* (s. Afr.: 10 spp.) 1046000

Leighton. 1965. *Jl S. Afr. Bot.*, Suppl. 4.

campanulatus *F.M. Leight.* subsp. **patens** (*F.M. Leight.*) *F.M. Leight.*

Perennial herb, up to 0,9 m high, deciduous. Leaves caulescent, 250–400 × 10–20 mm, apex acute or subacute. Perianth segments spreading widely to 90° from axis, perianth open. *Flowers sky-blue; December to February.* Montane, rocky grassland. *Mogg 38142.*

W S C N E

caulescens *Spreng.* subsp. **caulescens**

Perennial herb, up to 1 m high. Leaves broad, 40 mm or more, apices acute to markedly obtuse. Perianth segments spreading and recurving, perianth 30–50 mm long, tube 10–19 mm long. *Flowers gentian-blue to lobelia-blue; November to January.* Shady sites on streambanks, in dolerite outcrops. *Van Dam sub TRV 24349.*

W S C N E

coddii *F.M. Leight.*

Stout perennial herb, up to 1 m high, deciduous. Leaves caulescent, apices obtuse, sometimes subacute, 150–450 × 30–50 mm. Perianth longer than 35 mm, tube 8–12 mm. Peduncle up to 1 m high. *Flowers blue; January.* Along streams, mountainsides. *Ehrens & Codd 2081.*

W S C N E

dyeri *F.M. Leight.*

Perennial herb, up to 400 mm tall, deciduous. Leaves caulescent. Perianth expanding gradually from base to apex, tube 13–14 mm long. Pedicels almost cernuous when fully open. *Flowers blue; December to January.* Beside stream. *Codd & Dyer 8765.*

W S C N E

inapertus *P. Beauv.* subsp. **inapertus**

Perennial herb, up to 0,9 m high, deciduous. Leaves caulescent. Perianth tubular, 40–50 mm long, perianth segments spreading slightly. *Flowers sky-blue; December to March.* Grassland, forest clearings. *Codd 8416.*

W S C N E

inapertus *P. Beauv.* subsp. **hollandii** (*F.M. Leight.*) *F.M. Leight.*

Perennial herb, up to 1,2 m high, deciduous. Leaves caulescent. Perianth tubular, perianth segments spreading perceptibly, shorter than tube. *Flowers magenta-blue; January to March.* Grassland, amongst rocks. *Prosser 1776.*

W S C N E

inapertus *P. Beauv.* subsp. **intermedius** *F.M. Leight.*

Perennial herb, up to 0,9 m high, deciduous. Leaves caulescent. Perianth tubular, 25–45 mm long, perianth segments spreading perceptibly, usually as long as tube. *Flowers sky-blue; January to March.* Grassy, rocky mountainsides. *Reynolds 4240.*

W S C N E

inapertus *P. Beauv.* subsp. **parviflorus** *F.M. Leight.*

Perennial herb, up to 0,8 m high. Perianth segments not spreading appreciably, segments narrow, perianth 23–35 mm long. *Flowers blue or purple; January.* Grassland, between boulders. *Deall 2627.*

W S C N E

inapertus *P. Beauv.* subsp. **pendulus** (*L. Bolus*) *F.M. Leight.*

Perennial herb, up to 0,9 m high, deciduous. Leaves caulescent. Perianth tubular, 25–40 mm, perianth segments not spreading appreciably, almost as broad as long. *Flowers sky-blue; January to March.* Grassland, rocky slopes. *Barnett sub NBG 1056/16.*

W S C N E

nutans *F.M. Leight.*

Perennial herb, up to 0,9 m high. Leaves 200–500 × 10–40 mm broad with hyaline margins, apices subacute or obtuse. Perianth tube narrow to throat, segments spreading above. *Flowers deep purplish blue; December to March.* Wooded mountain streams. *Codd 5920.*

W S C N E

Albuca *L.* (s. Afr.: 56 spp.) 1079000

Genus under revision. According to Retief in Arnold & De Wet, *Plants of southern Africa: names and distribution* (1993), the following species occur in the area:

angolensis *Welw.*

glauca *Baker*

granulata *Baker*

massonii *Baker*

melleri *Baker*

nelsonii *N.E. Br.*

schlechteri *Baker*

setosa Jacq.

shawii Baker

Aloe L. (s. Afr.: 149 spp.)

1026000

Hardy & Glen. Pers. comm.

aculeata Pole Evans

Acaulescent, succulent herb, up to 0.6 m high, excluding inflorescence. Leaves with random surface prickles throughout. Inflorescence $\pm$ 1 m high. Racemes erect, cylindrical, very dense. *Flowers reddish orange to yellow in bud, orange to yellow at anthesis; June to August.* Grassland. Reynolds 5566.

W S C N E

affinis A. Berger

Acaulescent, succulent herb, up to 300 mm tall, solitary. Leaves 16–20, lineate, 200–400 $\times$ 50–100 mm, usually with maroon, horny margins between teeth, leaf spots obscure. Inflorescence with 3–8 ultimate branches. Racemes conical, longer than wide. *Flowers dull brick-red; May to June.* Bushveld, sandy loam. Strey 3768.

W S C N E

albida (Stapf) Reynolds

Acaulescent, heat-sensitive, succulent herb, up to 100 mm tall, proliferating below ground and forming clumps. Leaves not fibrous, margins usually minutely dentate. Raceme capitate. *Flowers white; February to March.* Grassland, mountain tops. Galpin 873.

W S C N E

aloooides (Bolus) Drueten

(= *A. recurvifolia* Groenew.)

Arborescent succulent, up to 4 m high. Inflorescence simple, up to 1.3 m high. Racemes narrowly cylindrical, over 500 mm long. Perianth shorter than 12 mm. *Flowers sessile, lemon-yellow; July to August.* Thin soil on dolomite outcrops. Van der Merwe 73.

W S C N E

angelica Pole Evans

Arborescent succulent, up to 4 m high. Inflorescence repeatedly branched. Racemes capitate, bicoloured. Perianth up to 30 mm long, mouth upturned. *Flowers orange-red to red in bud, yellow to greenish yellow at anthesis; May to June.* Restricted to rocky slopes. Van der Schijff 3823.

W S C N E

arborescens Mill.

A many-branched arborescent, succulent shrub, up to 3 m high. Leaves many per rosette, spreading to slightly reflexed, blue-green. Inflorescence simple, 0.8 m long. Racemes dense. Pedicels 20–40 mm long. *Flowers scarlet throughout or becoming yellow at anthesis;*

May to August. Rocky outcrops, in pockets of rich soil. Reynolds 1914.

W S C N E

barberiae Dyer

(= *A. bainesii* Dyer)

Tree, up to 18 m high, copiously, dichotomously branched. Leaves long, deeply channelled, sometimes reflexed, margins coarsely dentate. *Flowers pink to blood-red; May to June.* Forest. No specimens for the area in PRE.

W S C N E

branddraaiensis Groenew.

Acaulescent, succulent herb, up to 300 mm tall. Leaves with spots in transverse bands. Inflorescence with over 20 racemes, these less than 80 mm in diameter. Perianth inflated around ovary. *Flowers dull scarlet-red; June to July.* Bushveld, very thin soil. Hardy 6731.

W S C N E

castanea Schönland

Arborescent, succulent, up to 4 m high. Inflorescence simple, 1.5–2.0 m high. Racemes cylindrical, over 500 mm long. Perianth over 12 mm long. *Flowers pedicellate, chestnut-brown; July to August.* Hot, dry, thorny woodland. Reynolds 1470.

W S C N E

chabaudii Schönland

Acaulescent or shortly caulescent, succulent herb, up to 500 mm tall. Leaves unspotted, 60–170 mm wide. Inflorescence a much-branched panicle ($\pm$ 20 branches). Racemes lax, erect. Perianth trigonously indented, subclavate. *Flowers scarlet to brick-red.* Reynolds 1918.

W S C N E

chortolirioides A. Berger var. **chortolirioides**

Caulescent, succulent herb, up to 300 mm tall, forming dense tufts. Leaves not fibrous, margins usually minutely dentate, glaucous, up to 250 $\times$ 5 mm. *Flowers only after burning, yellow to red; March to September.* Grassland, wedged between rocks. Kluge 104.

W S C N E

chortolirioides A. Berger var. **wooliana** (Pole Evans)

Glen & D.S. Hardy

(= *A. wooliana* Pole Evans)

Caulescent, succulent herb, up to 300 mm tall. Leaves not fibrous, margins usually minutely dentate, glaucous, up to 400 $\times$ 8 mm. Bracts 5–7-nerved. *Flowers yellow or red; August to March.* Grassland, usually wedged between rocks. Pole Evans 8320.

W S C N E

cooperi Baker subsp. **cooperi**

Acaulescent or shortly caulescent, succulent herb, up to 0.75 m high. Leaves not fibrous, margins cartilaginous, dentate throughout, distinctly keeled, V-shaped

in section, 400–800 × 25–60 mm. *Flowers salmon-pink; January to March.* Marshy places or among rocks on hillsides. *Reynolds 2299.*

W S C N E

cryptopoda Baker

(= *A. pienaarii* Pole Evans,
= *A. wickensii* Pole Evans)

Acaulescent, succulent herb, up to 0,8 m high, excluding inflorescence. Leaves over 600 × 90 mm. Bracts many-nerved, ± 20 mm long. Inflorescence 5–8-branched, 1,25–1,75 m tall. Racemes subdense. *Flowers red, yellow or red in bud and yellow at anthesis; May to August.* Open woodland. *Reynolds 5558.*

W S C N E

dewetii Reynolds

Acaulescent, succulent herb, up to 0,8 m high. Leaves with lower surface lined, not spotted, leaf surfaces very shiny. Bracts longer than 17 mm. Inflorescence up to 2 m high. *Flowers dull greyish red; February to March.* Grassland. *PRE 38156.*

W S C N E

dyeri Schönland

Acaulescent or shortly caulescent herb, up to 0,7 m high, excluding inflorescence. Leaves with lower surface spotted, not lined. Bracts 7–many-veined, up to 17 mm long. Racemes narrowly conical. *Flowers glossy brick-red; March to June.* Forest, stony kloofs, in shade. *Reynolds 5553.*

W S C N E

ecklonis Salm-Dyck

Acaulescent or shortly caulescent, succulent herb, up to 1 m high. Roots fleshy. Leaves not fibrous, margins usually minutely dentate, distichous or in a rosette, 200–400 × 15–90 mm. *Flowers pedicellate, lemon-yellow to red; November to February.* Grassland, heavy soils. *Pole Evans 1.*

W S C N E

excelsa A. Berger

Arborescent succulent, up to 4 m high. Leaves 500–900 × 60–150 mm, lower surface of leaves usually without prickles. Inflorescence 0,8–1,0 m high. Racemes very dense. Perianth ventricose. *Flowers scarlet to reddish orange; July to September.* Hillsides, rocky outcrops. *Hardy 6057.*

W S C N E

fosteri Pillans

Acaulescent, succulent herb up to 400 mm tall, excluding inflorescence. Leaves spotted on upper surface, 16–24, suberect, 300–400 × 40–80 mm. Racemes over 190 mm long, lax, elongate-conical. *Flowers yellow to red; March to April.* Woodland, thin, rocky soils. *Buitendag 842.*

W S C N E

fouriei Glen & D.S. Hardy

Shortly, caulescent, succulent herb, up to 150 mm tall, solitary. Leaves not fibrous, margins usually minutely dentate. distichous, 275–350 × 10–25 mm. Raceme capitate. *Flowers with outer segments orange, inner segments yellow, apices green; November to December.* Montane grassland. *Fourie 3070.*

W S C N E

globuligemma Pole Evans

Succulent herb, up to 0,6 mm high, excluding inflorescence. Stems procumbent. Bracts 3–5-nerved. Inflorescence shorter than 1 m. Racemes secund, bicoloured, lax to subclax. *Flowers deep dull red in bud, sulphur-yellow to ivory at anthesis; July to August.* Hot, dry, thorny bushveld, stony soil. *Pole Evans sub GH20.*

W S C N E

grandidentata Salm-Dyck

Acaulescent or very shortly caulescent, succulent herb, up to 300 mm tall, excluding inflorescence. Racemes dense, conical to subcapitate, symmetrical. Perianth tube distinctly clavate. *Flowers dull red; August to September.* Scrub, on calcrete. *Pole Evans 244.*

W S C N E

greateadii Schönland var. greateadii

Acaulescent, succulent herb, up to 300 mm tall. Raceme apex rounded in silhouette, up to 100 mm in diameter. Pedicels shorter than 15 mm. *Flowers dull flesh-pink to almost white; May to July.* Grassland, rocky outcrops. *Reynolds 1519.*

W S C N E

greateadii Schönland var. davyana (Schönland) Glen & D.S. Hardy

(= *A. davyana* Schönland var. *davyana*,
= *A. davyana* Schönland var. *subulifera* Groenew.)

Acaulescent or shortly caulescent, succulent herb, up to 300 mm tall. Leaves and inflorescences shorter than in var. *greateadii*. Raceme apex acute in silhouette. Pedicels longer than 15 mm. *Flowers deep flesh-pink to almost white; May to July.* Grassland, rocky outcrops. *Mogg 15032.*

W S C N E

hardyi Glen

Pendent succulent herb. Leaves 12–20 per rosette, hanging, glaucous. Racemes subdense, conical to subcapitate. Pedicels 15–30 mm long. *Flowers pink to red; June to August.* Usually in almost inaccessible places on cliffs. *Fourie 3252.*

W S C N E

integra Reynolds

Acaulescent, succulent herb, up to 500 mm tall. Roots fleshy. Leaves not fibrous, margins usually minutely dentate, rosulate, 100–200(–500) × 20–50 mm. Bracts

shorter than pedicels. Racemes terminating in a small tuft of purple bracts. *Flowers lemon-yellow to canary-yellow; October to December.* Grassland, usually on sandy, stony soil. *Reynolds 1650.*

W S C N E

kniphofioides Baker

(= *A. marshallii* J.M. Wood & M.S. Evans)

Acaulescent, succulent herb, up to 400 mm tall, solitary. Rootstock with a bulb. Leaves not fibrous, margins usually minutely dentate, rosulate, 120–480 × 5–8 mm. Raceme very lax. *Flowers scarlet; November.* Grassland. *Kluge 112.*

W S C N E

linearifolia A. Berger

Acaulescent, succulent herb, up to 300 mm tall. Leaves not fibrous, margins usually minutely dentate, distichous, 160–360(–600) × 4–8(–10) mm. Bracts shorter than pedicels. Perianth mouth upturned. *Flowers greenish yellow to yellow; January to February.* Grassland. *Codd 9525.*

W S C N E

littoralis Baker

(= *A. rubrolutea* Schinz)

Arborescent succulent, up to 4 m high. Leaves unmarked, old dead leaves persistent. Inflorescence many-branched, 1.0–1.5 m high. Racemes erect, numerous, laxly flowered. *Flowers red or pink, rarely yellow; July to February.* Mixed, open woodland, grassland, rocky outcrops. *Schlieben & Strey 8322.*

W S C N E

lutescens Groenew. ex Pole Evans

A shortly, caulescent, succulent herb, up to 0.8 m high, excluding inflorescence. Leaves unspotted, up to 600 × 90 mm. Bracts 7-nerved, ± 15 mm long. Perianth glabrous. *Flowers scarlet in bud, yellow at anthesis; July to August.* Woodland, very sandy soils and calcrete. *Van der Merwe 1377.*

W S C N E

maculata All.

(= *A. saponaria* (Aiton) Haw.,
= *A. umfoloziensis* Reynolds)

Acaulescent or shortly caulescent, succulent herb, up to 500 mm tall. Leaves with spots in transverse bands. Racemes over 120 mm in diameter. Perianth inflated around ovary. *Flowers yellow to pink, orange or red; June to September.* Grassland. *Devenish 17.*

W S C N E

marlothii A. Berger subsp. marlothii

Arborescent succulent, up to 4 m high. Stems solitary, taller than 2 m. Leaves with many surface prickles. Inflorescence with over 10 branches. Racemes dense. *Flowers yellow to red in bud, yellow to orange at anthesis; June to August.* Grassland, rocky hills. *Smith 176.*

W S C N E

minima Baker

(= *A. minima* Baker var. *blyderivierensis* (Groenew.) Reynolds)

Acaulescent, succulent herb, up to 300 mm tall, solitary. Leaves not fibrous, margin usually minutely dentate, 6–10 in a rosette, 220–340 × 4–6 mm. Raceme subdense. *Flowers dull pink or greyish; February to March.* Grassland, heavy soils. *Codd 6401.*

W S C N E

modesta Reynolds

Acaulescent, succulent herb, up to 300 mm tall. Bulb present, roots fusiform or fleshy. Leaves not fibrous, margins entire. Bracts deltoid, longer than pedicels. Inflorescence a capitate raceme. *Flowers yellowish green; January to February.* Grassland. *Devenish 1323.*

W S C N E

monotropia I. Verd.

Acaulescent or shortly caulescent, succulent herb, up to 300 mm tall, excluding inflorescence. Stem usually procumbent. Leaves ± 20 per rosette, spreading, 340–400 × 45–60 mm. Raceme secund. Perianth mouth upturned. *Flowers old rose, rarely yellow; November to December.* Rocky slopes. *Smuts 1560.*

W S C N E

myriacantha (Haw.) Schult. & J.H. Schult.

Acaulescent, succulent herb, up to 300 mm tall. Leaves not fibrous, margins usually minutely dentate, 220–300 × 5–10 mm, in a rosette. *Flowers reddish pink or rarely white; January to May.* Grassland, among rocks. *Nel 304.*

W S C N E

nubigena Groenew.

Caulescent, succulent herb, in dense clumps. Leaves not fibrous, margins usually minutely dentate, rosulate, 160–330 × 12–20 mm. Raceme capitate. *Flowers orange; December to February.* Mist belt, wedged between rocks. *Van der Merwe 133.*

W S C N E

parvibracteata Schönland

(= *A. burgersfortensis* Reynolds,
= *A. pongolensis* Reynolds)

Acaulescent or very shortly caulescent, succulent herb, 200–400 mm tall, in clumps. Leaves spotted on upper surface only, spots in transverse bands. Perianth with tube cylindrical, mouth downturned. *Flowers dull red; June to July.* Woodland and hot, thorny lowveld. *Buitendag 839.*

W S C N E

peglerae Schönland

Acaulescent, succulent herb, up to 450 mm tall, solitary. Leaves with surface prickles, 175–250 × 50–70 mm, glaucous blue. Perianth 25–30 mm long. *Flowers magenta-red; July to August.* Scanty grassland, very little soil. *Reynolds 2877.*

W S C N E

petricola Pole Evans

Acaulescent, succulent herb, up to 1 m high, excluding inflorescence. Leaves shallowly canaliculate, 400–600 × 55–100 mm. Inflorescence up to 1 m high. Racemes erect, 1–3 per inflorescence. *Flowers dull red to coral-red in bud, orange to ivory at anthesis; July to August.* Rocky outcrops. *Kluge 594.*

W	S	C	N	E
---	---	---	---	---

pretoriensis Pole Evans

Caulescent, succulent herb. Stem up to 1 m high. Inflorescence 2.0–3.5 m high. Perianth without a basal swelling, outer perianth segments connate in basal two-thirds. Pedicels 12–40 mm long. *Flowers pale to bright pink; May to June.* Stony grassland. *Pole Evans sub GH12.*

W	S	C	N	E
---	---	---	---	---

reitzii Reynolds var. **reitzii**

Succulent herb, acaulescent or with short, procumbent stems, up to 0.9 m high, excluding inflorescence. Bracts longer than 10 mm. Inflorescence usually with over 3 racemes, 1.0–1.3 m high. Pedicels shorter than 4 mm. Capsule longer than 20 mm. *Flowers red above, lemon yellow below; February to March.* Mountain grassland. *Pole Evans 2308.*

W	S	C	N	E
---	---	---	---	---

simii Pole Evans

Acaulescent, succulent herb, up to 400 mm tall. Leaves deeply channelled to a U-shape in section, pale green, leaf sap yellow. Bracts as long as or longer than pedicels, 3–5-veined. Racemes cylindrical. *Flowers strawberry-pink; February to March.* Open woodland in areas with a lush grass understorey. *Sim sub GH 137.*

W	S	C	N	E
---	---	---	---	---

soutpansbergensis I. Verd.

Caulescent, succulent herb, up to 300 mm tall. Leaves not fibrous, margins usually minutely dentate, ± 7, distichous at first, becoming rosulate, 110–300 × 6–12 mm. Raceme subcapitate. *Flowers orange; January to February.* Mist belt, wedged between rocks. *Crundall sub PRE 27035.*

W	S	C	N	E
---	---	---	---	---

spicata L.f.

(= *A. sessiliflora* Pole Evans)

A subacaulescent to arborescent, succulent, up to 2 m high. Leaves thinner than 20 mm, channelled. Inflorescence simple, 0.6–1.2 m high. Racemes narrowly cylindrical, less than 50 mm in diameter. *Flowers brownish red in bud, greenish yellow to almost white at anthesis; June to August.* On a wide variety of soils. No specimens for the area in PRE.

W	S	C	N	E
---	---	---	---	---

suprafoliata Pole Evans

Acaulescent or shortly caulescent, succulent herb, up to 400 mm tall, excluding inflorescence. Leaves dis-

tichous in young parts (up to flowering size), smooth. Inflorescence 0.6–2.0 m high. Racemes shorter than 300 mm. Outer perianth segments free to base. *Flowers brilliant pink; May to July.* Montane grassland, in cracks in rock or near sheer cliffs. No specimens for the area in PRE.

W	S	C	N	E
---	---	---	---	---

swynnertonii Rendle

(= *A. chimanimaniensis* Christian,
= *A. petrophila* Pillans)

Acaulescent, succulent herb, up to 350 mm tall. Leaves with spots in transverse bands. Inflorescence with fewer than 20 racemes, these over 80 mm in diameter. Perianth inflated around ovary. *Flowers coral-red; February to July.* Cracks in rock on cliff faces. *Reynolds 2501.*

W	S	C	N	E
---	---	---	---	---

tenuior Haw.

Succulent herb, up to 3 m high. Stems leafless below but with lax apical tuft of leaves. Inflorescence 250–400 mm long, sublux to subdense. Pedicels 2–6 mm long. Perianth up to 20 mm long. *Flowers lemon-yellow to scarlet; October to December.* Open country on sandy soil, rarely in valley bushveld. *Hertzog sub PRE 38339.*

W	S	C	N	E
---	---	---	---	---

thompsoniae Groenew.

Much-branched, succulent herb, up to 200 mm tall. Leaves not fibrous, margins usually minutely dentate, rosulate, 90–200 × 4–15 mm. *Flowers orange; December to January.* Mist belt, on cliffs. *Van Jaarsveld 426.*

W	S	C	N	E
---	---	---	---	---

thorncroftii Pole Evans

Acaulescent or shortly caulescent, succulent herb, up to 500 mm tall. Leaves rosulate, tuberculate at least in seedling stage. Racemes over 0.3 m long. Outer perianth segments connate for at least half their length. *Flowers brilliant pink; September to October.* Serpentine. *Reynolds 1442.*

W	S	C	N	E
---	---	---	---	---

verecunda Pole Evans

Shortly caulescent, succulent herb, up to 450 mm tall. Leaves not fibrous, margins usually minutely dentate, distichous, 160–400 × 7–15 mm. Bracts acute, shorter than pedicels. *Flowers scarlet to magenta; December.* Grassland, wedged between boulders on ridges. *Codd 9882.*

W	S	C	N	E
---	---	---	---	---

vossii Reynolds

Acaulescent to very shortly caulescent, succulent herb, up to 500 mm tall, solitary. Leaves not fibrous, margins usually minutely dentate, rosulate, 250–500 × 7–25 mm. Bracts 7-veined. Raceme subdense. *Flow-*

ers orange to scarlet; January to February. Dense grassland. Reynolds 557.

W S C N E

vryheidensis Groenew.

A subcaulescent to arborescent succulent, up to 2 m high. Leaves thicker than 20 mm, flat. Inflorescence simple, 0.6–1.5 m high. Racemes narrowly cylindrical, over 50 mm in diameter. Flowers rose or brownish honey-yellow to greenish yellow; July to August. Alkaline soils derived from shales or dolomite. Stalmans 1342.

W S C N E

zebrina Baker

(= *A. transvaalensis* Kuntze,
= *A. vandermerwei* Reynolds)

Acaulescent or shortly caulescent, succulent herb, up to 300 mm tall, in clumps. Leaves spotted on both surfaces, 200–600 × 35–80 mm. Bracts cirrhou. Perianth mouth straight. Flowers pale to deep pink; February to April. Various habitats. Retief 583.

W S C N E

Androcymbium Willd. (s. Afr.: 27

spp.)

0969000

Krause. 1921. Notizbl. bot. Gart. Mus Berl. 7: 512–526.

burkei Baker

Sessile, cormous herb. Leaves elongate-lanceolate, crowded. Claw of perianth segments as long as blade. Capsule oblong. Flowers white at base, green at apex; July. Grassland. Burt Davy 14176.

W S C N E

longipes Baker

Soft cormous herb, sessile, with leaves and bracts keeled. Proper leaves 4, lanceolate-acuminate, up to 300 mm long. Tepal blades less than half as long as claw. Flowers maroon; October to May. Bushveld, grassland, between dolomite rocks. Onderstall 1164.

W S C N E

melanthioides Willd. var. **melanthioides**

Cormous herb. Stem produced. Leaves not crowded, lanceolate. Bracts mauve, green or white with darker veins, furnished with a leafy point. Flowers white; May to July. Grassland, often in disturbed veld. Smith 221.

W S C N E

melanthioides Willd. var. **striatum** (Hochst.) Baker

Cormous herb, up to 350 mm tall. Leaves remote. Bracts longitudinally striate. Perianth blade much longer than claw, exceeding claw by almost double. Flowers greenish white. Grassland, in rock crevices. Codd & De Winter 3271.

W S C N E

melanthioides Willd. var. **subulatum** Baker

Cormous herb, up to 300 mm tall. Leaves subulate, channelled. Bracts white with green stripes. Claw of perianth segments nearly or quite as long as blade. Flowers green; December to March. Grassland, rocky places. Venter 9182.

W S C N E

Anthericum L. (s. Afr.: 17 spp.)

0989000

Obermeyer. 1962. Bothalia 7: 669–767.

angulicaule Baker

(= *A. multisetosum* Baker,
= *A. robustum* Baker)

Perennial herb, up to 1.5 m high. Roots woody. Leaves distichous, ± 8. Flowers in divaricately branched racemes, clustered. Capsule rounded obtuse, rarely apiculate, with transverse ridges. Flowers white and keel green; August to May. Grassland, regularly ravaged by fires. Germishuizen 3209.

W S C N E

calyptrocarpum Baker

Grass-like, xerophytic perennial herb, up to 0.6 m high. Roots swollen, cylindrical. Leaves rosulate, many. Capsule smooth, acute. Flowers white; December to February. Grassland, rocky outcrops. Gerbaulet 23679.

W S C N E

cooperi Baker

(= *A. adscendens* Poelln.)

Perennial herb, up to 400 mm tall. Leaves linear. Bracts large, white or small, greenish. Raceme congested in a pseudocapitate inflorescence or lax. Filaments smooth. Flowers white with a greenish brown keel; October to February. Grassland, mountain sourveld. Venter 11090, Devenish 172.

W S C N E

cyperaceum Kies ex Oberm.

Perennial herb, up to 1.8 m high. Leaves distichous, margin raised. Flowers in dense fascicles, supported by long basal bracts. Floral bracts membranous, whitish, large. Style exerted from closed flower. Flowers white; March. Grassland. Stalmans 495.

W S C N E

fasciculatum Baker

(= *A. subulatum* Baker,
= *A. wilmsii* Diels)

Perennial herb, up to 0.6 m high, soft-leaved, gregarious species. Leaves with margins sometimes crisped. Raceme seldom divaricately branched, usually spicate or with many interrupted spikes on rhachis. Flowers white; August to March. Rocky grassland. Turner 691.

W S C N E

galpinii Baker var. **galpinii**

Wiry perennial herb, up to 0,75 m high. Leaves linear, primary leaves short, hairy, later leaves glabrous. Bracts aristate. Raceme divaricate with bare wiry branches. *Flowers bright white; August to February*. Grassland. Ellery 341.

W	S	C	N	E
---	---	---	---	---

galpinii Baker var. **matabelense** (Baker) Oberm.

(= *A. matabelense* Baker)

Perennial herb, up to 0,75 m high. Leaves glabrous, coriaceous, linear. Bracts small, apiculate. Raceme divaricate with bare, wiry branches. *Flowers white; October to April*. Usually along river courses, in sand. *Netshungani* 1502.

W	S	C	N	E
---	---	---	---	---

galpinii Baker var. **norlindhii** (Weim.) Oberm.

(= *Chlorophytum norlindhii* Weim.)

Perennial herb, up to 0,75 m high. Leaves linear, soft, margin fimbriate with red or white cilia up to 2 mm long. Raceme divaricate with bare wiry branches. *Flowers white; January to March*. Rocky, grassy slopes. *Meeuse & Strey* 10393.

W	S	C	N	E
---	---	---	---	---

haygarthii (J.M. Wood & M.S. Evans) Kies ex Oberm.

(= *Chlorophytum haygarthii* J.M. Wood & M.S. Evans)

Perennial herb up to 0,8 m high. Leaves numerous, rosulate, glabrous. Inflorescence simple, seldom with a basal, ascending branch. Bracts large. Inner bracteole oblique with one horn. *Flowers white with a green medial stripe; October to January*. Grassland, rocky hillsides. *Devenish* 404.

W	S	C	N	E
---	---	---	---	---

krauseanum Dinter

Grasslike, xerophytic perennial herb, up to 0,8 m high. Roots wiry with scattered tubers. Leaf margin thickened. Capsule small, globose, obtuse or apiculate with transverse ridges. *Flowers white with pink streaks; December to January*. Loamy sand. *Peeters, Gericke, Burelli* 107.

W	S	C	N	E
---	---	---	---	---

longistylum Baker

(= *A. polyphyllum* Baker)

Perennial herb, up to 1 m high. Leaves rosulate, numerous. Bracts small. Inflorescence divaricately branched (simple in young plants). Scape glabrous. Capsule beaked. *Flowers white; September to February*. Bushveld, rocky slopes, sandy flats. *Mauve et al.* 5316.

W	S	C	N	E
---	---	---	---	---

transvaalense Baker

Perennial herb, up to 0,8 m high. Leaves hairy, rosulate, numerous. Bracts large. Inner bracteole with two horns. Inflorescence simple, seldom with a basal, ascending branch. *Flowers white; October to January*. Grassland. *Stalmans* 237.

W	S	C	N	E
---	---	---	---	---

trichophlebium Baker

(= *A. pretoriense* Baker,
= *A. vaginatum* Baker)

Pubescent perennial herb, up to 200 mm tall. Leaves lanceolate-ovate, wider than 20 mm, not petioled. Inflorescence a congested, many-flowered raceme. Filaments scabrid. *Flowers white; October to January*. Grassland, rocky ridges. *S.A.G.P.* 3/132.

W	S	C	N	E
---	---	---	---	---

Asparagus L. (s. Afr.: 81 spp.)

1113000

Obermeyer & Immelman. 1992. *F.S.A.* 5,3: 11–70.

Obermeyer. 1992. *F.S.A.* 5,3: 71–82.

Fellingham & Meyer. 1995. *Bothalia* 25: 205–209.

acocksii Jessop

(= *Protasparagus acocksii* (Jessop) Oberm.)

Large shrub or climber, up to 3 m high. Side roots tuberous. Stem smooth, white. Leaves glaucous. Cladodes varying in size and number, filiform, curved, apiculate, up to 35 mm long. Racemes contemporary with cladodes. *Flowers white*. Bushveld and woodland. *Krynauw* 914.

W	S	C	N	E
---	---	---	---	---

africanus Lam.

(= *Protasparagus africanus* (Lam.) Oberm.)

Plant erect when stems young, scrambling later, up to 0,6 m or more high. Spines straight or reflexed, sharp, reddish brown with scale leaves above similar in colour, present below cladode fascicles. *Flowers white; October*. Stony hillsides. *Robbertse* 355.

W	S	C	N	E
---	---	---	---	---

aggregatus (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus aggregatus* Oberm.)

Scandent shrublet. Stems up to 3 m long. Cladode bases not discoid, cladodes flat in cross section, aggregate in upper half of short branchlets. Inflorescence a compound raceme, $\pm$ 50 mm long. *Flowers cream; January*. Mixed bushveld, on dry sandy soil or rocky hillsides. *Meeuse & Strey* 10430.

W	S	C	N	E
---	---	---	---	---

angusticladius (Jessop) Fellingham & N.L. Mey.

(= *Asparagus aethiopicus* L. var. *angusticladius* Jessop,
= *Protasparagus angusticladius* (Jessop) Oberm.)

Tall, glabrous climber, up to 3 m high. Stems terete, mottled grey. Spines short, patent-recurved. Cladodes deciduous, $\pm$ 40–50 $\times$ 1 mm. Racemes compound, 300–400 mm long. Flower stalk $\pm$ 4 mm long, articulated near base. *Flowers white; September to October*. Bushveld. *Mogg* 22470.

W	S	C	N	E
---	---	---	---	---

asparagoides (L.) W. Wight

(= *Medeola asparagoides* L.,
= *Myrsiphyllum asparagoides* (L.) Willd.)

Scandent, much-branched perennial herb. Root tubers attached close to rhizome, fusiform, 40–60 $\times$ 10–15 mm, radiating from rhizome. Phylloclades solitary,

ovate to cordate, 25–40 × 8–20 mm. Style 1. *Flowers white with green stripes; October to April.* Forest, wooded areas, riverbanks. *Kluge 2202.*

W S C N E

aspergillus Jessop

(= *Protasparagus aspergillus* (Jessop) Oberm.)

Slender, erect or twining shrub, up to 2 m high. Cladodes produced after flowers, in fascicles of ± 4 , ± 20 –30 × 0.5 mm, with an indistinct keel. Pedicels 1.5 mm long, articulated at apex. *Flowers white; May to June.* Bushveld. *Dreyer sub TRV 19063.*

W S C N E

bechuanicus Baker

(= *Protasparagus bechuanicus* (Baker) Oberm.)

Shrub, up to 0.6 m high. Stems clearly longitudinally striate when young. Spines present on main branches but not below cladode fascicles. Cladodes present at flowering time. *Flowers along branches, white; June to November.* Dry grassland, mopane veld. *Codd 4858.*

W S C N E

buchananii Baker

(= *Protasparagus buchananii* (Baker) Oberm.)

Tall, glabrous densely branched, woody climber. Spines reflexed, flattened, 15–50 mm long at base of plant. Racemes simple or compound. Anthers yellow. Berry bearing a short basal knob. *Flowers white; January to February.* Bushveld. *Mauve 5377.*

W S C N E

clareae (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus clareae* Oberm.)

Tall, slender climber. Cladodes filiform, greyish green, usually narrower than 1 mm. Racemes up to 45 mm long, not interspersed with cladodes. *Flowers white; May to July.* Succulent bushveld. *Mauve, Reid & Smook 5413.*

W S C N E

concinus (Baker) Kies

(= *Asparagus africanus* Lam. var. *concinus* Baker, = *Protasparagus concinns* (Baker) Oberm. & Immelman)

Small shrub, up to 1 m high. Stems and branches closely, minutely ribbed, often pubescent. *Flowers few (3 or 4), on long recurved pedicels, exerted from base of cladode fascicles, cream-white; November to December.* Grassland, hillsides, often in rocky situations. *Devenish 1844.*

W S C N E

cooperi Baker

(= *Protasparagus cooperi* (Baker) Oberm.)

Scandent, glabrous chamaephyte, up to 5 m high. Mature cladodes (5–)10–20 mm long, filiform, very dense. *Flowers inside cladode fascicle, white with a green midrib; September to November.* In bush or exposed places, sometimes in disturbed soil. *Scheepers 1029.*

W S C N E

densiflorus (Kunth) Jessop

(= *Protasparagus densiflorus* (Kunth) Oberm.)

Thorny shrublet, up to 1 m high, erect with short to very short branches ('fox-tail' form). Spines short, recurved. Cladodes evergreen, 5–15 × 1–2 mm. *Flowers white with a pink tinge; November to February.* Variable habitat. *Fourie 2110.*

W S C N E

devenishii (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus devenishii* Oberm.)

Robust shrublet, up to 1 m high, pubescent, at least on young branches. Spines reflexed, ± 5 mm long, present only along stem nodes. *Flowers white; October.* Montane, rocky areas. *Devenish 1156.*

W S C N E

divaricatus (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus divaricatus* Oberm.)

Erect or scandent shrub, up to 1.5 m high. Branchlets long, thin. Cladodes filiform, 30–40 mm long. Flower fascicles much shorter than subtending cladodes; flower stalks 5–6 mm long. *Flowers deep mauve, turning paler later; September to November.* Rocky hillsides. *J.B.G. 5974.*

W S C N E

edulis (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus edulis* Oberm.)

Annual herb, erect at first, lengthening and scrambling with age, glabrous, slender. At least some flowers at ends of short spreading or recurved branchlets. *Flowers white; October to January.* Open grassland or in shade in scrub. *Scheepers 1028.*

W S C N E

exuvialis Burch. forma *exuvialis*

(= *Protasparagus exuvialis* (Burch.) Oberm.)

Erect or scrambling, glabrous shrub up to 2 m high. Branches and branchlets widely zigzagging, with short internodes, with membranous bark peeling off in white strips. Spines poorly developed, small, present only below nodes of branches or absent. *Flowers 2 at each node, stalk ± 3 mm long, bracts broad, short, yellow or white; January.* In sandy areas and on surface limestone. *Verdoorn sub PRE 29385.*

W S C N E

exuvialis Burch. forma *ecklonii* (Baker) Fellingham & N.L. Mey.

(= *Asparagus ecklonii* Baker, = *Protasparagus exuvialis* (Burch.) Oberm. forma *ecklonii* (Baker) Oberm.)

Erect or scrambling, glabrous shrub up to 2 m high. Branches and branchlets straight or nearly so. Spines poorly developed, small, present only below nodes of branches or absent. *Flowers 2–4(–6) at each node, stalk ± 1 mm long, bracts acute; yellow or white; October to January.* Bushveld. *Smook 4263.*

W S C N E

falcatus L.(= *Protasparagus falcatus* (L.) Oberm.)

Tall glabrous climber. Spines short, recurved. Cladodes broadly linear, with a distinct midrib, longer than 50 mm, wider than 2.5 mm. *Flowers white; October to February*. Moist situations, usually along margins of forest and bushclumps. *Stalmans 821*.

W S C N E

flavicaulis (Oberm.) Fellingham & N.L. Mey. subsp.**flavicaulis**(= *Protasparagus flavicaulis* Oberm.)

Erect chamaephyte, up to 300 mm tall. Branchlets absent. Young stems yellow. Basal half of spine puberulous, apical half glabrous. Cladodes glabrous, smooth. Flowers lateral beside opposing cladode fascicles, which are placed halfway along a spinous branch. *Flowers white; August to December*. Grassland, rocky hillsides. *Liebenberg 8477*.

W S C N E

flavicaulis (Oberm.) Fellingham & N.L. Mey. subsp.**setulosus** (Oberm.) Fellingham & N.L. Mey.(= *Protasparagus flavicaulis* Oberm. subsp. *setulosus* Oberm.)

Erect chamaephyte, up to 300 mm tall. Branchlets absent. Young stems yellow. Basal half of spine puberulous, apical half glabrous. Cladodes setulose. Flowers lateral beside opposing cladode fascicles, which are placed halfway along a spinous branch. *Flowers white; May*. Grassland, rocky hillsides. *Smook 4185*.

W S C N E

fouriei (Oberm.) Fellingham & N.L. Mey.(= *Protasparagus fouriei* Oberm.)

Erect shrub, up to 1 m high. Cladodes with papillate ribs. Flowers in a compound, bare raceme without cladodes. Stamens large (1.5 mm), with dark purple anthers. *Flowers white; March to April*. Mixed bushveld, dolomite koppies. *Fourie 3114*.

W S C N E

fractiflexus (Oberm.) Fellingham & N.L. Mey.(= *Protasparagus fractiflexus* Oberm.)

A woody, glabrous climber, up to 1 m high. Stems and branches strongly zigzagging. Spines absent. Cladodes (5–)10–30 mm. Flowers exerted from apical cladode fascicle. *Flowers white; November to February*. Rocky montane areas. *Toelken 1116*.

W S C N E

intricatus (Oberm.) Fellingham & N.L. Mey.(= *Protasparagus intricatus* Oberm.)

Compact, dense, spiny shrub. Branchlets short, stout, zigzagging. Cladodes $\pm$ 10 mm long. Flower fascicles $\pm$ as long as subtending cladodes. Flower stalk 5–6 mm long. *Flowers white; September*. Dry rocky hills. *Mogg 16890*.

W S C N E

laricinus Burch.(= *Protasparagus laricinus* (Burch.) Oberm.)

Erect shrub, up to 2.5 m high. Spines present below cladode fascicles, short, hard, straight or slightly curved. Cladodes tapering to a cuneate base, 12–35 mm long. *Flowers white; October to February*. Bushveld and grassland. *Mauve, Reid & Smook 5402*.

W S C N E

lynetteae (Oberm.) Fellingham & N.L. Mey.(= *Protasparagus lynetteae* Oberm.)

Scandent shrub. Main root tuberous. Cladodes triangular in cross section, with marginal ridges, narrower than 1 mm. Stamens with yellow anthers. *Flowers white with a reddish central streak*. Bushveld. *Mauve, Reid & Smook 5408*.

W S C N E

macowanii Baker(= *Protasparagus macowanii* (Baker) Oberm.)

Erect, glabrous shrub, up to 2 m high. Stems and branches smooth, glabrous. *Flowers many, erect in each dense cladode fascicle; white; October to November*. Near rivers or in shady, moist places. *Dyer & Verdoorn 5832*.

W S C N E

microraphis (Kunth) Baker(= *Asparagopsis microraphis* Kunth,= *Protasparagus microraphis* (Kunth) Oberm.)

Dome-shaped shrub, up to 1 m high. Cladodes shortly cylindrical, terete, glabrous, numerous in each fascicle. *Flowers solitary, pendulous, stalk with disc near base, cream with a salmon or green centre stripe*. Mountain-sides, humid, rocky places. *Mauve 4508*.

W S C N E

minutiflorus (Kunth) Baker(= *Protasparagus minutiflorus* (Kunth) Oberm.)

Pubescent erect shrub, up to 500 mm tall. Cladodes soft, filiform, stellately arranged. *Flowers solitary or binate, borne along branches and branchlets at or near stem, white; August to September*. Mopane veld, open thorn bushveld, stony hillsides. *Zambatis 1496*.

W S C N E

natalensis (Baker) Fellingham & N.L. Mey.(= *Asparagus aethiopicus* L. var. *natalensis* Baker,= *Protasparagus natalensis* (Baker) Oberm.)

Tall, evergreen, glabrous climber. Young branches clearly and regularly ridged. Spines small, exerted. Cladodes linear, 1.5–2.5 mm wide. Flower stalk stout, with a large membranous, frilled disc in lower half. *Flowers white; October*. Dry bushveld. *Fourie 2075*.

W S C N E

nelsii Schinz(= *Protasparagus nelsii* (Schinz) Oberm.)

Erect, spiny shrub, up to 1 m high. Stems whitish grey, smooth; nodes many-budded, swollen, below with a sharp recurved spine 5–10 mm long. Cladodes $\pm$ 8 in a fascicle, $\pm$ 10–25 mm long, greyish green. *Flowers*

white or pale cream. Dry areas, sandy grassy flats, along dry riverbeds. Smook 4319.

W S C N E

nodulosus (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus nodulosus* Oberm.)

Minutely pubescent, scandent shrub or climber. Stems bearing swollen knobs. Cladodes fine, thin, ± 5 mm long, in dense, semicircular fascicles. Flowers white. Woodland, often near rivers. Jeppe sub PRE 616449.

W S C N E

plumosus Baker

(= *Protasparagus plumosus* (Baker) Oberm.)

Scandent, evergreen, perennial herb. Main roots terete. Branches and cladodes spreading in one plane. Cladode fascicles compressed (flattened); cladodes ± 3 –(5) mm long. Flower apical, in centre of upper cladode fascicle. Flowers white; February to March. Undergrowth in shade of forests, occasionally in open grassland. Fourie 1864.

W S C N E

racemosus Willd.

(= *Protasparagus racemosus* (Willd.) Oberm.,
= *Asparagus saundersiae* Baker)

Tall climber or tangled shrub. Spines spreading-recurved, ± 5 mm long at base of plant. Racemes simple. Anthers red. Berry rounded at base. Flowers white with a reddish central streak; January. Thickets. Raal & Raal 699.

W S C N E

ramosissimus Baker

(= *Myrsiphyllum ramosissimum* (Baker) Oberm.)

Scandent, evergreen, perennial herb. Stem, branches and branchlets angled. Phylloclades in fascicles of 3, linear to filiform, laxly spreading, ± 1 mm wide, with a prominent midrib. Anthers and berries red. Fusiform root tubers terminating in long thin roots. Flowers white; September to December. Forests, kloofs, riverbanks, moist, shady places. Devenish 206.

W S C N E

retrofractus L.

(= *Protasparagus retrofractus* (L.) Oberm.)

Scrambler, up to ± 3 m high or forming tangled shrubs, bearing dense terminal fascicles of bunched cladodes. Stems zigzag and usually whitish to pale grey. Cladodes filiform, ± 10 –30 mm long, pale to bright yellow-green. Flowers white; March to April. Sandy areas. Gubb 145/28.

W S C N E

rigidus Jessop

(= *Protasparagus rigidus* (Jessop) Oberm.)

Glabrous, xerophytic, erect, dense shrub, up to 500 mm tall. Spines minute. Cladodes stiff, 3-angled with a spinous brown tip. Flowers on short peduncles, 3-nate,

white; November. Montane areas, in rocky ledges. Killick & Strey 2380.

W S C N E

schroederi Engl.

(= *Asparagus obermeyeriae* Jessop,
= *Protasparagus schroederi* (Engl.) Oberm.)

Erect, rigid, spiny shrub, up to 1 m high. Side roots tuberous. Spines sharp, 5–15 mm long, patent to recurved. Cladodes 3–10 per fascicle, filiform, up to 50 mm long, absent at time of flowering. Anthers red. Flowers white or cream; October. Dry, often sandy areas. Mauve, Smook & Reid 5404.

W S C N E

sekukuniensis (Obem.) Fellingham & N.L. Mey.

(= *Protasparagus sekukuniensis* Oberm.)

Scandent shrub, up to 2 m high. Cladodes glabrous, filiform, 25–30 mm long. Racemes 50–80 mm long, dense, numerous up-curved side branchlets bearing flower clusters. Hills. Mogg & Barnard 602B.

W S C N E

setaceus (Kunth) Jessop

(= *Protasparagus setaceus* (Kunth) Oberm.)

Evergreen, perennial, erect or scandent herb, up to 2 m high. Main roots swollen in young plants. Cladode fascicles globose, cladodes 4–7(–12) mm long. Flowers solitary in centre of apical cladode fascicle, white; November to March. Undergrowth, in moist, humus-rich soil. Van der Schijff 5006.

W S C N E

suaveolens Burch.

(= *Protasparagus suaveolens* (Burch.) Oberm.)

Erect chamaephyte, up to 1 m high. Stems minutely pubescent. Branches either spreading or suppressed ('fox-tail' habit adopted during dry conditions). Spines straight, often producing spinules. Cladodes filiform. Flowers white with a dark midrib; June to January. Rocky grassland. Stirton 9760.

W S C N E

transvaalensis (Oberm.) Fellingham & N.L. Mey.

(= *Protasparagus transvaalensis* Oberm.)

Erect, spiny, much-branched, glabrous shrub, up to 1 m high. Spines exerted, present below nodes and cladode fascicles, ± 6 mm long. Cladodes 1–3 in a fascicle, erect, filiform, 15–50 mm long. Flowers white; December to January. Bushveld, rocky places, hill-sides and krantzes. Coetzee 1461.

W S C N E

virgatus Baker

(= *Protasparagus virgatus* (Baker) Oberm.)

Erect, stiff, herbaceous, spineless shrub, up to 1 m high. Stems erect with spreading branches, giving a fern-like appearance, glabrous and clearly quadrate. Cladodes (1)2–4(–7) in a fascicle, 5–15(–25) mm long. Flowers

placed along branches. *Flowers white; September to January*. In shade. *Liengme 141*.

W S C N E

Behnia *Didr.* (s. Afr.: 1 sp.) 1147000

Dyer. 1976. Gen. 2: 944.

Obermeyer. 1992. F.S.A. 5,3: 83–84.

reticulata (*Thunb.*) *Didr.*

(= *Ruscus reticulatus* Thunb.)

Herbaceous climber. Leaves alternate, sessile, ovate, up to 120 mm long, green, glossy, furnished with a distinct midrib and 5–7 strongly marked vertical veins on each side of it. Berry globose, fleshy, 10–15 mm in diameter. *Flowers lime-yellow; August to November*. Bushveld, woodland and forest. *Onderstall 1177*.

W S C N E

Bowiea *Harv. ex Hook. f.* (s. Afr.: 2 spp.) 1011000

Dyer. 1941. Flower. Pl. Afr.: t. 815.

volubilis *Harv. ex Hook. f.*

Geophyte. Bulb depressed, subglobose, up to 150 mm in diameter, yellowish green if exposed. Flowering stems slender, twining, 2–3 m long; branches reflexed, spreading. Perianth segments spreading, 5 mm long. *Flowers green; September to April*. among boulders, hillsides. *Bredenkamp 1034*.

W S C N E

Bulbine *Willd.* (s. Afr.: 41 spp.) 0985000

Nordenstam. 1964. Bot. Notiser 117: 183–187.

abyssinica *A. Rich.*

Perennial herb, up to 0,65 m high. Leaves in basal tufts, linear from a broad, sheathing, pinkish base with membranous margins, acuminate above to an acute apex. Bracts ± 14 mm long, whitish with a green keel. *Flowers canary-yellow; September to February*. Grassland. *Codd 3185*.

W S C N E

angustifolia *Poelln.*

(= *B. tortifolia* I. Verd.)

Perennial herb, up to 0,8 m high. Leaves cylindrical, subulate, spirally twisted, up to 350 mm long and 5 mm in diameter. Stamens bearded with a rim of long yellow hairs in upper half of filament. *Flowers lemon-yellow; October to March*. Grassland, rocky slopes. *Verdoorn sub PRE 38932*.

W S C N E

capitata *Poelln.*

(= *B. stenophylla* I. Verd.)

Caespitose perennial herb, up to 200 mm tall. Tufts of leaves united at base in a slender, cylindrical column, whitish, ± 50 mm long and 5 mm in diameter. Racemes

subcorymbose, 40–100 mm long, up to 40 mm in diameter. *Flowers yellow; August to December*. Grassland. *Stalmans 602*.

W S C N E

coetzeei *Oberm.*

Glabrous perennial herb, up to 500 mm tall. Tuber small. Lamina filiform, ± 500 mm long and 1 mm in diameter, deeply grooved. Pedicels short, recurving if unfertilized. *Flowers yellow; January to March*. Rocky grassland. *Mohle 489*.

W S C N E

filifolia *Baker*

(= *B. trichophylla* Baker)

Perennial herb, up to 200 mm tall, acaulescent, with a globose tuber, 15–20 mm in diameter, crowned by a dense ring of erect bristles 20–30 mm long. Leaves 6–8, subterete, erect, linear. *Flowers yellow; October to December*. Grassland, rocky ridges. *Turner 332*.

W S C N E

frutescens (*L.*) *Willd.*

(= *B. caulescens* L.,
= *B. rostrata* Willd.)

Perennial herb, up to 200 mm tall. Rhizomes formed. Aerial woody or rosulate branches present or woody branches suppressed. Leaves cylindrical to filiform, subulate. *Flowers yellow; August to April*. Bushveld, woodland, grassland, rocky slopes. *Buitendag 1070*.

W S C N E

inflata *Oberm.*

Perennial herb, up to 1,25 m high. Leaves rosulate, 10–15, erect, terete, ± 500 mm long, 10 mm wide. Capsule swollen, membranous, ± 20 mm in diameter. Seeds angled, black. *Flowers yellow; December to January*. Grassland, rocky hillsides. *Codd 9503*.

W S C N E

latifolia (*Lf.*) *Roem. & Schult.*

(= *B. brunsvigiaefolia* Baker,
= *B. natalensis* Baker)

Perennial herb, up to 300 mm tall, acaulescent with a dense rosette of leaves. Leaves fleshy, up to 300 mm long, 50–60 mm broad, ovate-lanceolate. Raceme many-flowered. *Flowers yellow; October to November*. Wooded slopes. *Killick & Strey 2668*.

W S C N E

narcissifolia *Salm-Dyck*

Acaulescent perennial herb, up to 400 mm tall. Leaves flat, linear-lanceolate to linear, 100–240 × 5–10 mm. Inflorescence with bracts lanceolate-deltoid, membranous, white. *Flowers bright yellow; September to December*. Grassland. *Scheepers 1603*.

W S C N E

Camptorrhiza E. Phillips (s. Afr.:

1 sp.)

0975010

Obermeyer. 1961. Kirkia 1: 86–87.

strumosa (Baker) Oberm.

Gregarious geophyte, up to 400 mm tall. Corm ovoid with a knee-shaped, horizontal tuber of previous year attached to it. Filaments with a thick bulge in middle. Style long, with a small, apical stigma. *Flowers pale mauve and green; October to February.* Woodland, bushveld, rocky situations. *Sister Catherine sub PRE 38770.*

W S C N E

Chlorophytum Ker Gawl. (s. Afr.:

19 spp.)

0990000

Obermeyer. 1962. Bothalia 7: 690–711.

aridum Oberm.

Perennial herb, up to 1 m high. Leaves ± 20 mm wide, usually half-folded undulate. Inflorescence patently branched. Floral bracts shorter than flowers. Ovary with ± 10 ovules in each cell. Capsule globose. Ovary sessile. *Flowers white; January to February.* Bushveld. *Mauve 4067.*

W S C N E

bowkeri Baker

Perennial herb, up to 1 m high. Inflorescence simple. Raceme dense with flowers close together and bracts usually larger than flowers. Capsule oblong. *Flowers white, tinged brown; October to March.* Grassland, damp situations. *Scheepers 1115.*

W S C N E

comosum (Thunb.) Jacq.

Perennial herb, up to 0,8 m high. Leaves lanceolate, attenuate towards base. Inflorescence a simple raceme, often with a leafy apical tuft. Capsule smooth, globose. *Flowers white; November to May.* Forested kloofs, high montane forest scrub, forest floors. *Venter 7852.*

W S C N E

crookianum Zahlbr.(= *C. longipedunculatum* Forbes)

Perennial herb, up to 2 m high. Leaves ± 60 mm wide, flat or somewhat folded. Inflorescence patently branched. Floral bracts shorter than flowers. Ovary with ± 16 ovules per cell, sessile. Capsule oblong. *Flowers white; February to March.* Grassland, stony hillsides, pine plantations. *Kluge 1169.*

W S C N E

macrosporum Baker(= *C. rhodesianum* E. Phillips)

Perennial herb, up to 1,5 m high. Leaves linear-lanceolate, up to 15 mm broad, margin wavy. Pedicels very slender, up to 25 mm long. Perianth urceolate. Ovary stipitate.

Flowers green; November to February. Bushveld. *Leach sub PRE 39019.*

W S C N E

Chortolirion A. Berger (s. Afr.: 1 sp.) 1029010

Dyer. 1944. Flower. Pl. Afr. 24: t. 932.

Smith & Van Wyk. 1993. Kew Bull. 48,1: 105–113.

angolense (Baker) A. Berger(= *C. stenophyllum* (Baker) A. Berger,= *C. tenuifolium* A. Berger,= *Haworthia angolensis* Baker)

Herbaceous perennial herb, up to 360 mm tall (in flower), acaulescent. Bulb with a few loosely packed, membranous scales. Leaves rosulate, slender, grass-like, deciduous, dying back to ground level after fires or frost. *Flowers white and reddish brown; September to February.* Grassland. *Hanekom 1843.*

W S C N E

Dipcadi Medik. (s. Afr.: 14 spp.) 1084000

Obermeyer. 1963. Bothalia 8: 117–137.

ciliare (Zeyh. ex Harv.) Baker

Bulbous herb, up to 400 mm tall. Leaves many, rosulate, linear, flat, long-attenuate to apex, shorter than inflorescence, margin crisped and ciliate. Flowers 20–28 mm long. *Flowers green, brownish or yellowish green.* Grassland. PRE specimens on loan.

W S C N E

glaucum (Ker Gawl.) Baker

Large bulbous herb, up to 1,2 m high. Leaves many, rosulate, glaucous, up to 70 mm wide. Pedicels 20–70 mm long. Anthers with a short, apical appendage. *Flowers green with a brownish margin; November to May.* Bushveld. PRE specimens on loan.

W S C N E

gracillimum Baker(= *D. polyphyllum* Baker)

Bulbous herb, up to 300 mm tall. Leaves (at least after rains) many, not rosulate, filiform, $\pm$ equalling inflorescences in length, glabrous, margin entire. Flowers ± 10 mm long. *Flowers green, sometimes with a reddish tinge; September to March.* Bushveld. PRE specimens on loan.

W S C N E

marlothii Engl.

Bulbous herb, up to 1 m high. Leaves many, grass-like, outer with short, white, straggling hairs on margin and dorsally at base (these sometimes absent later in season). Scape smooth. *Flowering September to April.* PRE specimens on loan.

W S C N E

papillatum Oberm.

Bulbous herb, up to 400 mm tall. Leaves 4–6, linear-lanceolate, acuminate, glaucous, glabrous, margin yel-

low, prominent, papillate. Scape often minutely ribbed and papillate. *Flowers green*. Grassland, red sandy soil. PRE specimens on loan.

W S C N E

rigidifolium Baker

Bulbous herb, up to 500 mm tall. Leaves strap-shaped, coriaceous, apex obtuse, apiculate, margin prominent, often red. *Flowers green; November to April*. Grassland. PRE specimens on loan.

W S C N E

vaginatum Baker

Herb, up to 400 mm tall. Leaf 1, clasping scape at base; lamina folded, linear, margin smooth. Caudate appendages of outer segments long. *Flowers green*. Mopane sandveld. *Mauve 4398*.

W S C N E

viride (L.) Moench

(= *D. umbonatum* (Baker) Baker)

Bulbous herb, up to 1,2 m high. Leaves linear to lanceolate, soft, long-tapered towards apex, margin not prominent. Perianth segment $\pm$ 12 mm long. *Flowers with outer perianth segments green with a cream, orange, red or brown tinge; flowering either once in early spring or intermittently during summer*. Grassland, sandveld. PRE specimens on loan.

W S C N E

Dracaena Vand. ex L. (s. Afr.: 2 spp.) 1109000

Coates Palgrave. 1977. Trees of southern Africa: 86.

aletriformis (Haw.) Bos

(= *D. hookeriana* K. Koch,

= *D. transvaalensis* Baker)

Softly, woody shrub or small, dichotomously branched tree, up to 4 m high. Leaves strap-like, leathery, up to 600 $\times$ 80 mm, in rosettes at ends of branches. Fruit a berry, up to 20 mm in diameter, turning yellow to red when ripening. *Flowers white to yellowish green; November to January*. Forest, bushveld, rocky hillsides. *Codd 8793*.

W S C N E

Drimia Jacq. ex Willd. (s. Afr.: 13 spp.)

1082000

Baker. 1897. F.C. 6: 436.

Jessop. 1977. JI S. Afr. Bot. 43: 265–319.

Obermeyer. 1981. Bothalia 13: 452–453.

ciliaris Jacq.

Geophyte, up to 1 m high. Leaves produced after flowers, midrib distinct, linear with soft, reflexed hairs along margin. Corolla reflexed, twisted. *Flowers white, greenish brown to purple; October to January*. Bushveld, rocky slopes. *Codd 4786*.

W S C N E

elata Jacq.

Geophyte, up to 0,7 m high. Bulb hypogeal. Leaves produced after flowers, glabrous, flattened. Raceme dense, many-flowered. Pedicels $\pm$ as long as flowers. *Flowers green, mauve, silvery white, pink, purple, yellowish beige; August to December*. Grassland, especially near water, among rocks. *Scheepers 715*.

W S C N E

neriniformis Baker

Geophyte, up to 450 mm tall. Leaves produced after flowers. Inflorescence a congested, globose raceme, 30–40 mm in diameter. Perianth segments linear, cucullate at tip. *Flowers white; November to December*. Grassland, vleis. *Devenish 257*.

W S C N E

robusta Baker

(= *D. alta* R.A. Dyer)

Geophyte, up to 1,5 m tall. Leaves contemporary with flowers, lorate-lanceolate. Upper bracts $\pm$ 10 mm long. *Flowers in an elongate, often rather dense, raceme; reddish white, mauve-white; September to June*. Forest, lowveld. *Zambatis 806*.

W S C N E

sphaerocephala Baker

Geophyte, up to 0,6 m high. Leaves produced after flowers. Inflorescence a congested, globose raceme, 15–20 mm in diameter. Perianth segments linear, cucullate at tip. *Flowers greenish white or greyish white; October to December*. Mountain grassland, mountainsides, among rocks. *Mohle 106*.

W S C N E

Drimiopsis Lindl. (s. Afr.: 5 spp.) 1090000

Jessop. 1972. JI S. Afr. Bot. 38: 151–162.

atropurpurea N.E. Br.

(= *D. purpurea* F. van der Merwe)

Geophyte, up to 300 mm tall. Leaves usually cordate at base, pubescent. Apices of perianth segments incurved to cucullate. *Flowers usually shorter than 3 mm, purple; October to March*. Disturbed forest patches, vleis. *Reid 735*.

W S C N E

burkei Baker

(= *D. crenata* F. van der Merwe,

= *D. woodii* Baker)

Geophyte, up to 200 mm tall. Leaves usually cuneate, 40–100 $\times$ 20–40 mm. Apices of perianth segments incurved to cucullate. *Flowers usually shorter than 3 mm, green, white or purple; August to December*. Grassland, bushveld, woodland, vleis. *Scheepers 770*.

W S C N E

maculata Lindl.(=*D. minor* Baker)

Geophyte, up to 200 mm tall. Leaves cordate at base. Flowers 4–5 mm long, apparently always green, often white in bud. Apices of perianth segments incurved to cucullate. *Flowers green; November. In shade of bush on dolomite. Codd & De Winter 3261.*

W S C N E

maxima Baker

Geophyte, up to 300 mm tall. Leaves with blade ovate, 80–150 × 30–50 mm. Flowers striped, often partly pink, 9 mm or less. Apices of perianth segments erect-spreading. *Flowers pink, white, green or brown; September to February. Grassland, forest, among rocks, in shallow pans. Hardy 4049.*

W S C N E

Eriospermum Jacq. ex Willd. (s. Afr.:

98 spp.)

1012000

Perry. 1994. Contr. Bolus Herb. 17.

abyssinicum Baker(=*E. luteorubrum* Baker)

Geophyte, with inflorescence up to 400 mm tall, produced before leaves. Tuber depressed-globose, interior white-fleshed, up to 42 mm long, 40 mm wide. Leaf solitary, lamina narrowly lanceolate to falcate, up to 140 × 17 mm, glaucous green, with parallel veins. Raceme very lax, 90–320 mm long and up to 100 mm wide, with up to 50 flowers. *Tepals lemon- to bright yellow with a green midvein overlaid with red streaking; September to December. Grassland. Dyer 3419.*

W S C N E

cooperi Baker var. **cooperi**

Geophyte, with inflorescence up to 0.6 m tall, produced before leaves. Leaf solitary, lamina broadly ovate-cordate, up to 50 × 85 mm. Peduncular bract glabrous. *Tepals a uniform colour in both whorls, being either white or pale green with a darker green midvein, sometimes with red stippling towards apex; October to December. Grassland, damp streamsides, lightly wooded areas. Dyer 4163.*

W S C N E

corymbosum Baker

Geophyte, with inflorescence up to 120 mm tall, corymbose, produced before leaves. Leaf and peduncular bract ovate-cordate; lamina 35 mm × 20 mm, both surfaces bright green. *Tepals pale to bright yellow with a green midvein; November to February. Calcareous sandy soils, silty flats or hillsides. Van Wyk 594.*

W S C N E

mackenii (Hook. f.) Baker subsp. **galpinii** (Schinz)

P.L. Perry

(=*E. galpinii* Schinz)

Solitary geophyte. Leaves 2–5, erect or suberect, lamina ovate, up to 90 × 40 mm. Contemporary leaf sheath,

base of lamina only, base of peduncle covered in short hairs. Inflorescence up to 400 mm tall, produced together with leaves. *Tepals bright yellow, 9–10 mm long with a green midvein; November to February. White or red sandy soils in mixed savanna, grassland or in wet pans. Galpin 1135.*

W S C N E

ornithogaloides Baker

Geophyte, with inflorescence a lax raceme with ±10 flowers, up to 200 mm tall; peduncle up to 160 mm long, produced before leaves. One leaf per growing point, prostrate not appressed, lamina ovate to orbicular-cordate, up to 35 mm from apex to lobes, 28 mm wide, adaxial surface green, abaxially paler, glabrous, margin red, ciliate. *Tepals white with a dark green midvein overlaid with indigo-blue; November to December. Damp, rocky slopes or flats on sandstone or on peaty soils. Strey 2987.*

W S C N E

porphyrium Archibald

Geophyte, with inflorescence a dense raceme up to 0.7 m high, narrowly cylindrical to conical, with up to 60 flowers, produced before leaves. Tuber simple or with stolons. Leaf solitary, prostrate, lamina broadly ovate-cordate, up to 120 mm long from apex to depression, 90 mm wide, thin, coriaceous, dark green and often purple underneath. *Tepals cream or pale green with a green midvein overlaid with purple streaking often covering whole of outer tepals; December to May. Habitat variable, mainly in clayey soils or red sandy soil. Codd 3453.*

W S C N E

porphyrovalve Baker

Geophyte, with inflorescence a lax, few-flowered, irregularly shaped raceme up to 150 mm tall, produced together with the flowers. Tuber globose. Leaves usually 2 per growing point, glabrous or basally hairy, lamina linear, ± 60 × 4 mm, or elliptic, 10 × 5 mm; leaf sheath not exerted or up to 15 mm long. Tepals 5 mm long, 2 mm wide, bright yellow with a green midvein, red-streaked apically. *Schlechter 3622.*

W S C N E

schinzii Conrath ex Baker

Geophyte, with inflorescence a lax 10–20-flowered raceme up to 500 mm tall, produced before the leaves. Tuber up to 40 mm long, 28 mm wide, warty but not forming stolons. Leaf solitary, lamina ovate to narrowly lanceolate, apiculate, 50–100 × 20–60 mm, glaucous, glabrous or sparsely hairy on abaxial surface towards base, margin reddish. Anthers turquoise or green. *Flowers with tepals white or cream with a dark green midvein and sometimes red-streaked; November to February. In full sun in quartz rocks or calcareous clay, in grassland or in disturbed ground. Kies 343.*

W S C N E

Eucomis L'Hér. (s. Afr.: 10 spp.) 1088000

Reyneke. 1974. Jl S Afr. Bot. 40: 61–63.
Reyneke. 1980. Bothalia 13: 140–142.

autumnalis (Mill.) Chitt. subsp. **autumnalis**

(= *E. undulata* Aiton)

Geophyte, up to 500 mm tall. Leaves linear to ovate, 60–130 × 150–550 mm, margin undulate. Perianth segments 10–16 mm long. Peduncle cylindrical. Capsule with a thin, sometimes inflated pericarp. *Flowers pale green; December to April.* Open grassland, mountainsides, forest margins. *Theron 1769.*

W S C N E

autumnalis (Mill.) Chitt. subsp. **clavata (Baker)**

Reyneke

(= *E. robusta* Baker)

Geophyte, up to 0.6 m high. Leaves lanceolate to ovate, 150–450 × 60–130 mm, margin undulate, cuticle on leaf margin dentate. Peduncle clavate. Perianth segments 12–17 mm long. Capsule with a hard double-layered pericarp. *Flowers green, yellowish green, greenish white; November to April.* Open grassland, marshes. *Letty 382.*

W S C N E

bicolor Baker

Geophyte, up to 500 mm tall. Pedicels of mature flowers 15 mm or longer, drooping. Flowers with filaments and margins of perigone purplish. *Flowers white and purple; January.* Mountainsides, along streams. *Fredrikson sub Herb. Galpin 9802.*

W S C N E

montana Compton

Geophyte, up to 500 mm tall, social plant, not solitary. Leaves standing semi-erect, not undulate, surface smooth, spotted or speckled, broadly ovate, up to 500 × 180 mm. *Flowers green; December to February.* Rocky situations. *Codd 9496.*

W S C N E

pole-evansii N.E. Br.

Geophyte, up to 1 m high. Raceme ± 300 mm long and 90 mm in diameter. Pedicels of mature flowers with a sharp angle. Ovary conspicuous, cream-coloured, becoming green. *Flowers greenish white; October to April.* Along streams in marshy ground, moist kloofs. *Kerfoot 8298.*

W S C N E

vandermerwei I. Verd.

Geophyte, up to 400 mm tall. Leaves green and spotted with maroon, ± 400 mm long, 40–50 mm wide, margins undulate. Peduncle suffused with pink and spotted with maroon. Filaments greenish white to green instead of purple. *Flowers maroon; January to May.* Montane grassland, rocky ledges. *Van der Merwe 1278.*

W S C N E

Galtonia Decne. (s. Afr.: 4 spp.) 1081000

Baker. 1897. F.C. 6: 451.

Verdoorn. 1955. Flower. Pl. Afr. 30: t. 1188.

candicans Decne.

Geophyte, up to 1.3 m tall. Leaves up to 50 mm broad, up to 1 m long. Bracts prominent, lanceolate. Perianth ± 30 mm long, lobes distinctly longer than tube. *Flowers white; December to February.* Scrub margins, forest, streambanks and vleis. *Devenish 516.*

W S C N E

Gasteria Duval (s. Afr.: 67 spp.) 1027000

Baker. 1896. F.C. 6: 286.

transvaalensis De Smet ex Baker

Succulent perennial. Leaves rosulate, narrow, ± linear, verrucose. Raceme simple, many-flowered. Perianth up to 40 mm long, cylindrical. Shady, dolomite cliffs. *Thompson sub PRE 34779.*

W S C N E

Gloriosa L. (s. Afr.: 1 sp.) 0963000

Baker. 1897. F.C. 6: 525.

Field. 1971. Kew Bull. 25: 243.

superba L. subsp. **superba**

(= *G. virens* Lindl.)

Climbing geophyte. Leaves sessile, ovate to ovate-lanceolate, with a cirriferous tip. Perianth segments with crisped margins and a clawed base, reflexed, ± 50 mm long. *Flowers yellow; December to May.* Riverbanks, mixed woodland, lowveld, shrub-bushveld. *Stalmans 925.*

W S C N E

Haworthia Duval (s. Afr.: 147 spp.) 1029000

Scott. 1985. The genus *Haworthia*.

koelmaniorum Oberm. & D.S. Hardy

(= *H. macmurtryi* C.L. Scott)

Succulent, perennial herb, up to 360 mm (inflorescence) tall, caulescent, with leaves in a basal rosette. Leaves firm, with small, glossy, translucent tubercles arranged in irregular wavy transverse bands. *Flowers white with grey-green keels to segments; September to October.* Sloping sandstone ridges, wedged into cracks. *Hardy, Mauve & Koeleman 2267.*

W S C N E

tesselata Haw.

Succulent, perennial herb. Acaulescent, 15–70 mm in diameter, freely suckering from stoloniferous roots. Leaves firm, up to 50 × 30 mm, up to 3 mm thick, dark green to grey-green; upper leaf surface mostly transparent, with a number of longitudinally tessellately branched veins. Inflorescence up to 0.5 m tall. *Perianth greenish white with ± dirty green keels to segments, up*

to 20 mm long; September to October. Grassland, sandy soil or between cracks which sometimes contain small deposits of rich soil. *Brueckner 1207.*

W S C N E

Iphigenia Kunth (s. Afr.: 1 sp.) 0975000

Obermeyer. 1961. *Kirkia* 1: 84–85.

bechuanica Baker

Geophyte, up to 400 mm tall. Underground part a small, ovoid, tunicated corm. Perianth $\pm$ 10 mm long. Filaments filiform. Style short with 3 revolute, papillate stigmas. *Flowers greenish brown or greenish purple; January.* Bushveld. *Bredenkamp 1341.*

W S C N E

Kniphofia Moench (s. Afr.: 47 spp.) 1024000

Codd. 1968. *Bothalia* 9: 363–513.

Cufodontis. 1971. *Annln. naturh. Mus. Wien* 75: 39–41.

albescens Codd

Perennial herb. Leaves 6–12 mm broad. Inflorescence dense. Peduncle up to 0,75 m high. Bracts ovate-lanceolate. Perianth 11–15 mm long. *Flowers white or cream; January.* Dense grassland on mountainsides. *Bruce 289.*

W S C N E

baurii Baker

Perennial herb. Leaves glaucous to semiglaucous. Bracts eroso-denticulate. Peduncle up to 0,6 m high. Fruits subglobose, 5–8 mm long. Buds dull red. *Flowers green to greenish yellow; October.* Moist, grassy slopes. *Reynolds sub PRE 37268.*

W S C N E

coralligemma E.A. Bruce

Perennial herb. Leaves 500–900 mm long, rarely broader than 10 mm, margin smooth in lower part. Inflorescence dense. Peduncle up to 0,9 m high. *Flowers cream or ivory to cream-yellow or orange-yellow; February to April.* Forest margins, grassy slopes, marshy places. *Codd 8764.*

W S C N E

crassifolia Baker

Perennial herb, probably solitary. Leaves grass-like; leaf margin conspicuously serrulate. Perianth 15–18 mm long, cylindrical, not constricted above ovary. *Flowers white or pale yellow.* No specimens in PRE.

W S C N E

ensifolia Baker subsp. **ensifolia**

Acaulescent perennial herb. Peduncle up to 1,8 m high. Pedicels 1–3(–4) mm long. Perianth up to 24(–25) mm

long. *Flowers white, often red in bud stage; October to December.* Marshy places, vleis, streambanks, black clay soil. *Bruce 229.*

W S C N E

fluviatilis Codd

Perennial herb. Peduncle up to 0,6 m high. Perianth 42–50 mm long. Buds and flowers pendulous. Buds flame- to orange-red. *Flowers apricot-yellow to greenish yellow; November to December.* Mountain grassland. *Codd 6655.*

W S C N E

galpinii Baker

Perennial herb. Leaves grass-like, 2–6 mm broad, fibrous in texture. Inflorescence mainly scarlet, often yellowish at base. Peduncle up to 0,6 m high. Perianth 26–50 mm long. *Flowers yellow to orange; January to March.* Dense grassland, hillsides, vleis. *Mohle 490.*

W S C N E

laxiflora Kunth

Perennial herb. Inflorescence lax, particularly in lower part. Peduncle up to 0,9 m high. Bracts ovate-oblong, obtuse. Flowers at first spreading. Perianth 25–35 mm long. *Flowers pale yellow or yellowish green to orange, salmon-pink, coral-red or red-orange; February.* Grassy slopes, among rocks. *Bruce 279.*

W S C N E

linearifolia Baker

Perennial herb. Inflorescence large, oblong to rhomboid. Peduncle up to 1,5 m high. Buds pinkish red to green tinged with dull red. Perianth exceeding 28 mm in length (rarely less). Stamens scarcely exerted. *Flowers yellow to yellowish green or green; January to April.* Mountain grassland, marshy places, streambanks. *Codd 7922.*

W S C N E

multiflora J.M. Wood & M.S. Evans

Perennial herb. Inflorescence elongate, 300–800 mm long. Peduncle up to 1,6 m high. Perianth shorter than 20 mm. Flowers 7–12 mm long, ascending. *Flowers yellow to pale orange; February to April.* Grassland, vlei margins, mountain marshes, streambanks. *Buitendag 1174.*

W S C N E

porphyrantha Baker

(= *K. conrathii* Baker)

Perennial herb. Leaves 6–14 mm broad, soft-textured. Inflorescence bicolorous with a few red buds at apex, remainder of inflorescence lemon-yellow. Peduncle up to 0,6 m high. Perianth 30–42 mm long. *Flowers lemon-yellow; October to December.* Vleis in grassland, mountain grassland. *Codd & Bruce 3382.*

W S C N E

rigidifolia E.A. Bruce

Perennial herb. Leaves yellow-green, margin finely serrulate. Buds flame- or orange-red to coral-red. Peduncle up to 0,9 m high, subequal to leaves or slightly longer. *Flowers yellow-green to green; October to November.* Dense grass among dolerite rocks, beside streams. *Codd 6654.*

W S C N E

splendida E.A. Bruce

Perennial herb. Leaves midgreen, 10–20 mm broad. Peduncle up to 2,5 m high. *Flowers greenish yellow to orange-yellow; March to April.* Forest margins, among rocks, grassy slopes. *Scheepers 925.*

W S C N E

triangularis Kunth subsp. **obtusiloba** (A. Berger) Codd
(= *K. obtusiloba* Diels ex A. Berger)

Perennial herb. Leaves 3–9 mm broad, soft-textured; leaf margins smooth. Inflorescence concolorous, coral-red. Peduncle up to 0,6 m high. Perianth 24–35 mm long. *Flowers tending to dry purplish brown; coral-red; January to April.* Mountain grassland, among quartzite rocks. *Codd 8274.*

W S C N E

typhoides Codd(= *Notosceptrum natalense* Baker)

Perennial herb. Leaves 350–650 mm long. Inflorescence 150–300 mm long. Peduncle up to 0,75 m high. Flowers spreading. Perianth 4,0–6,5 mm long. Bracts ovate-deltoid to subrotund. *Flowers brown to purplish brown; February to March.* Low-lying pans or vleis, black clay soil. *Bruce 258.*

W S C N E

Ledebouria Roth. (s. Afr.: 16 spp.) 1090010

Jessop. 1970. JI S. Afr. Bot. 36: 233–266.

apertiflora (Baker) Jessop(= *Scilla lorata* Baker)

Geophyte, up to 200 mm tall. Bulbs 40–60 mm long, often pink towards top. Leaves 4–7, erect, usually 200–350 mm long, narrower than 25 mm, sublinear, tapering almost from base. Inflorescence erect or flexuose, often with 50–150 flowers. *Flowers dull purple; October to January.* Rocky grassland. *Devenish 1785.*

W S C N E

cooperi (Hook. f.) Jessop(= *Scilla cooperi* Hook. f.,
= *Scilla saturata* Baker)

Geophyte, up to 200 mm tall. Bulb 25–40 mm long, with relatively loosely arranged scales. Leaves lanceolate. Raceme moderately dense. *Flowers purple; September to December.* Grassland, mountain sourveld, rocky hillsides, vleis. *Devenish 288.*

W S C N E

floribunda (Baker) Jessop(= *Scilla floribunda* Baker,
= *Scilla megaphylla* Baker)

Geophyte, up to 250 mm tall. Bulbs longer than 70 mm. Leaves lorate-lanceolate, up to 360 mm long, 60–70 mm broad. Flowers usually more than 150 per inflorescence. *Flowers greenish white; October to January.* Woodland, rocky hillsides. *Van der Schijff 1232.*

W S C N E

graminifolia (Baker) Jessop

Geophyte, up to 120 mm tall. Leaves 10–20, linear, 40–80 mm long, 1–4 mm broad, usually spirally twisted. Inflorescence suberect, rather dense, often with $\pm$ 30–70 flowers. *Flowers green with a purple tinge; September to November.* Grassland. *Leendertz 1530.*

W S C N E

inquinata (C.A. Sm.) Jessop

Geophyte, up to 150 mm tall. Bulbs 25–65 mm long, outer scales often dark and glossy or with a pink tinge. Leaves erect, ovate-lanceolate, narrowing towards base, up to 150 $\times$ 35 mm, very glaucous. *Flowers pink-mauve; September to January.* Forest margins, rocky outcrops. *Verdoorn & Mogg sub PRE 30533.*

W S C N E

luteola Jessop

Geophyte, up to 150 mm tall. Bulbs 35–50 mm long; scales producing copious threads when torn; inner scales yellow. Leaves 4–10, erect or arcuate, up to 80(–130) mm long, lanceolate to linear-lanceolate, spotted or transversely marked, rather firm. *Flowers mauvish brown inside and green outside; September to November.* Grassland, slopes of kloofs. *Van der Merwe 1287.*

W S C N E

marginata (Baker) Jessop

Geophyte, up to 150 mm tall. Bulbs 40–80 mm long; outer scales often dark and glossy with pink markings. Leaves erect, firm with prominent veins, up to 160 $\times$ 10–30 mm. Inflorescence usually flexuose with 50–150 flowers. *Flowers purplish green; September to November.* Grassland. *Mogg 16753.*

W S C N E

ovatifolia (Baker) Jessop(= *Scilla climatocarpha* C.A. Sm.,
= *Scilla ovatifolia* Baker)

Geophyte, up to 200 mm tall. Bulb scales of very different heights, all relatively firm, producing copious threads when torn. Leaves usually ovate, up to 250 mm long, firmly appressed to ground. *Flowers purplish green; July to March.* Grassland, rocky hillsides. *Verdoorn 801.*

W S C N E

revoluta (L.f.) Jessop(= *Scilla lanceaeifolia* (Jacq.) Baker)

Geophyte, up to 200 mm tall. Bulbs 25–75 mm long. Leaves 4–8, appressed to ground, ovate to lanceolate,

rarely longer than 150 mm, up to 30 mm broad. Inflorescence usually suberect. *Flowers mauve-purple; September to February.* Grassland. *Kluge 309.*

W S C N E

undulata (Jacq.) Jessop

(= *Scilla rautanenii* Schinz)

Geophyte, up to 175 mm tall. Bulbs 20–50 mm long, usually with several dry outer scales, sometimes forming a neck. Leaves firm, undulate, narrowly linear-lanceolate to lanceolate, often folding longitudinally. *Flowers green with a tinge of purple; September to November.* Grassland. *Van der Schijff 3214.*

W S C N E

viscosa Jessop

Geophyte, up to 200 mm tall. Bulbs 50–100 mm long, 12–20 mm broad. Leaves 1–3, erect, oblanceolate-spathulate, 90–230 mm long, 17–30 mm broad, viscid. *Flowers purple; January.* Bushveld, sandy soil. *Dyer & Ehrens 4201.*

W S C N E

Lilium L. (s. Afr.: 1 sp.)

1072000

Dyer. 1976. Gen. 2: 931.

formosanum (Baker) Wallace*

Geophyte, up to 2 m high. Leaves alternate, many, linear, up to 160 mm long. Flowers solitary, paired or 3–10 in an umbel, funnelform, white inside, suffused wine-purple outside. *Flowers white; January to March.* Grassland, disturbed bushland, roadsides. Native to Europe and Asia. *Onderstall 1038.*

W S C N E

Litanthus Harv. (s. Afr.: 1 sp.)

1085000

Dyer. 1976. Gen. 2: 934–935.

pusillus Harv.

Small geophyte, ± 10 mm tall. Bulb globose, white; roots many, thin, villous. Leaves produced after flowers, filiform. Bracts spurred. Perianth deciduous, cernuous, tubular, with 6 short rounded lobes. *Flowers white; February and October.* Streambanks, rock crevices. *Smook 1039.*

W S C N E

Littonia Hook. (s. Afr.: 2 spp.)

0964000

Dyer. 1976. Gen. 2: 919.

modesta Hook.

(= *L. rigidifolia* Bredell)

Climbing geophyte. Leaves cauline, verticillate below, alternate above, linear to ovate, attenuate into a recurved tendril or aristate at apex. Flowers solitary. Perianth segments free, recurved. *Flowers golden yellow; No-*

vember to March. Woodland, forest and montane grassland. *Scheepers 877.*

W S C N E

rigidifolia Bredell

Erect herb, up to 500 mm tall. Leaves linear to linear-lanceolate, 30–85 × 2–8 mm, sessile, cirrhiferous at tip. Perianth with tube ± 5 mm long, lobes ± 17 mm long. *Flowers solitary in axils of upper leaves, green; November to February.* Bushveld. *Van der Merwe sub PRE 20488, 20299.*

W S C N E

Massonia Thunb. ex Houtt. (s. Afr.: 5 spp.)

1101000

Jessop. 1976. JI S. Afr. Bot. 42: 401–437.

jasminiflora Burch. ex Baker

(= *M. bowkeri* Baker)

Geophyte. Leaves glabrous or rarely pustulate, paired, orbicular to oblong, flat on ground, coriaceous to fleshy, (25–)30–60 × 15–50 mm. Inflorescence axis usually capitate. *Flowers light purplish pink to white; May.* Open grassland, limestone gravel, surface calcrete tufa. *Van Wyk 928.*

W S C N E

Neobakeria Schltr. (s. Afr.: 4 spp.)

1099010

Jessop. 1976. JI S. Afr. Bot. 42: 401–437.

comata (Baker) Schltr.

Bulbous succulent, up to 150 mm tall. Leaves usually paired, lanceolate to ovate, usually with an undulate or crisped margin, 80–220 × 15–60 mm. Largest bracts shorter than 10 mm or early deciduous. Inflorescence axis usually somewhat elongate. Perianth tube longer than 20 mm. *Flowers pale white-purplish; April.* Grassland. *Zambatis 202.*

W S C N E

Nothoscordum Kunth (s. Afr.: 1 sp.)

1050000

Henderson & Anderson. 1966. Common weeds of South Africa: 68.

gracile (Aiton) Stearn*

(= *N. fragrans* (Vent.) Kunth)

Bulbous plant, up to 0.6 m high. Bulbs producing numerous bulbils. Leaves linear, soft, flat, 100–300 mm long. Umbels on long stems with 2 small spathes below umbel. *Flowers white to greenish white; October to December.* Disturbed places, often in nursery tins. Native to North America. *Balsinhas 3458.*

W S C N E

Ornithogalum L. (s. Afr.: 58 spp.)

1089000

Obermeyer. 1978. Bothalia 12: 323–375.

capillare J.M. Wood & M.S. Evans

Small, soft, bulbous herb, up to 150 mm tall. Bulbs forming a neck. Raceme subcorymbose. Peduncle stiff, wiry, 40–90 mm long. Perianth 8 mm in diameter. *Flowers white; November*. Rock crevices. *Codd 8070*.

W S C N E

juncifolium Jacq.

Mesophytic or xerophytic bulbous herb. Bulb tunics not breaking up in claws. Leaves normally numerous, ribbed, margin strigose, bristles often retrorse, rarely smooth. Seeds 1–2 mm long, angled, colliculate. *Flowers white, midrib darkening with age; September to February*. Wooded slopes, rock crevices, sandstone ledges. *Venter 1100*.

W S C N E

monophyllum Baker

(= *O. annae-ameliae* U. & D. Müll.-Doblies)

Delicate bulbous herb, up to 250 mm tall. Leaves 1–few, filiform, each surrounded basally by a cataphyll band with transverse, dark, thick ridges, soon integrating. Perianth forming a tube at base. Ovary stipitate. *Flowers white; September to November*. Mountain-sides in shady crevices, filled with damp, fibrous, peaty soil. *Galpin 1051*.

W S C N E

ornithogaloides (Kunth) Oberm.

(= *O. zeyheri* Baker)

Hygrophytic, gregarious, glabrous, bulbous herb, up to 450 mm tall. Bulb small. Leaves 4–8, up to 450 mm tall, ± 2 mm in diameter. Raceme cylindrical, lax, shorter to as long as leaves. Perianth segments ± 4 mm long. *Flowers white; November to February*. Riverbanks and vleis. *Strey 3066*.

W S C N E

paludosum Baker

(= *Elsiea flanaganii* (Baker) F.M. Leight.,
= *O. gracile* Baker)

Solitary, slender, hygrophilous, bulbous herb, up to 0,6 m high. Bulb usually poorly developed. Raceme subspicate. Pedicels 2–4 mm long. Perianth segments spreading when fully open, usually untidily twisted or spreading or reflexed when withered. *Flowers white; October to November*. Montane grassland, in moist alpine or marshy depressions. *Kluge 2036*.

W S C N E

prasinum Lindl.

Bulbous herb, up to 300 mm tall. Leaves 300×10 –16 mm. Raceme cylindrical, 15–30-flowered, pedicel 20 mm. Perianth segments narrowly oblong, ± 8 mm long, obtuse. *Flowers green or green and white; October to January*. Dry, sandy or alluvial, grassy flats, overgrazed areas. *Codd 8021*.

W S C N E

saundersiae Baker

Bulbous herb. Leaves forming an erect rosette. Raceme erect, much exserted from leaf rosette. Perianth segments reflexed in fruit. Ovary dark green or black. *Flowers creamy white; December to March*. Damp, rocky hillsides, riverbanks. *Reynolds 5843*.

W S C N E

seineri (Engl. & Krause) Oberm.

Bulbous herb, up to 400 mm tall. Leaves dark-speckled below. Racemes subpyramidal, with peduncle up to 300 mm long. Perianth segments spreading, oblong, 12–20 mm long. *Flowers white with a green midrib; November to February*. Bushveld. *Retief 129*.

W S C N E

tenuifolium D. Delaroche subsp. **tenuifolium**

Bulbous herb, up to 0,6 m high. Bulb not extended into a neck. Leaves ± 5 per flowering shoot, usually linear-acuminate, 4–8 mm wide towards middle. *Flowers with white sides and a broad, green, central band; November to March*. Wooded kloofs, rocky grassland. *Codd 8188*.

W S C N E

tenuifolium D. Delaroche subsp. **aridum** Oberm.

Bulbous herb, up to 0,6 m high. Bulb in older plants extended into a neck, often with transverse ridges. Leaves many, filiform, 2–4 mm wide towards middle. *Flowers with white sides and a broad, green, central band; September to February*. Grassland. *Acocks 20827*.

W S C N E

Ornithoglossum Salisb. (s. Afr.):

8 spp.)

0973000

Nordenstam. 1982. *Opera Botanica* 64: 1–51.

dinteri Krause

(= *O. glaucum* Salisb. var. *grandiflorum* Baker p.p.)

Geophyte, up to 500 mm tall. Stem with above-ground part 100–200 mm long. Tepals 10–25 mm long, reflexed. Nectary margin shaped like a funnel or protruding mouth. *Flowers green, purple or brown; January to April*. Grassland. *Theron 5451*.

W S C N E

vulgare B. Nord.

Geophyte, up to 0,7 m high. Pedicels erecto-patent to spreading or recurved. Perianth actinomorphic. Nectary margin simple, straight or emarginate. Tepals 10–23 mm long. *Flowers reddish brown, maroon or purplish black; September to January*. Bushveld, sandy flats, rock crevices. *Gerstner 5593*.

W S C N E

Sandersonia Hook. (s. Afr.: 1 sp.)

0965000

Dyer. 1976. *Gen.* 2: 920.

aurantiaca Hook.

Erect or scandent geophyte. Leaves sessile, alternate, ascending, linear or lanceolate, up to 80 mm long, tip cirriferous or aristate. Perianth globose, urceolate, $\pm$ 20 mm long. *Flowers bright yellow; January*. Kloofs, ravines. *Beeton HWB103*.

W S C N E

Sansevieria Thunb. (s. Afr.: 3 spp.) 1110000

Brown. 1915. Kew Bull.: 185–261.

Wijnands. 1973. Taxon 22: 109.

Obermeyer. 1992. F.S.A. 5,3: 5.

aethiopica Thunb.

Perennial herb, up to 400 mm tall. Leaves of adult plants 10–15 mm broad, 12–30 to a growth, linear, deeply channelled down face, with a subulate white tip, slightly rough. *Flowers white; November to January*. Grassland, in rock crevices, in shade. *Prosser 1686*.

W S C N E

hyacinthoides (L.) Druce

(= *S. grandis* Hook. f. var. *zuluensis* N.E. Br.,

= *S. thyrsiflora* Thunb.)

Perennial herb, up to 500 mm tall. Leaves of adult plants mostly shorter than 300 mm, up to 100 mm broad, $\pm$ conspicuously marked with transverse bands of pale green, margins red, hardened. *Flowers white; January to February*. Wooded streambanks, wooded kloofs. *Venda Herb. 892*.

W S C N E

pearsonii N.E. Br.

(= *S. desertii* N.E. Br.)

Perennial herb, up to 1 m high. Leaves dull dark green, margins acute with a red-brown line inside a membranous white edge, central or all leaves of adult plants gradually but not widely diverging from base to apex. *Flowers pale vinaceous to greyish olive; August to September*. Thorn-scrub, arid lowveld. *Van der Merwe 2176*.

W S C N E

Schizobasis Baker (s. Afr.: 1 sp.) 1010000

Dyer. 1976. Gen. 2: 926.

intricata (Baker) Baker

Geophyte, up to 400 mm tall. Bulb pear-shaped. Leaf 1, filiform, soon withering and falling. Inflorescence erect or scrambling, green, copiously and intricately branched, the whole forming a complex raceme which persists after flowering and fruiting until end of season. *Flowers white; August to October*. Bushveld, woodland, rocky hillsides. *Acocks 12873*.

W S C N E

Scilla L. (s. Afr.: 4 spp.)

1086000

Jessop. 1970. JI S. Afr. Bot. 36: 233–266.

natalensis Planch.

(= *S. kraussii* Baker)

Geophyte, up to 1 m high. Bulbs present. Leaves basal, lanceolate to ovate, pubescent. Inflorescence erect. Perianth segments spreading. *Flowers vivid blue or purplish blue; July to November*. Grassland, streambanks, humus filled pockets in rocks. *Drews 70*.

W S C N E

nervosa (Burch.) Jessop

(= *Schizocarphus nervosus* (Burch.) Van der Merwe,

= *Scilla rigidifolia* Baker)

Geophyte, up to 300 mm tall. Bulbs with fibrous tops. Leaves basal, usually longer than 125 mm. Inflorescence always simple. Floral bract situated some distance below pedicel. *Flowers white, green or pink; September to February*. Grassland, mountain sourveld. *Reid 455*.

W S C N E

Smilax L. (s. Afr.: 1 sp.)

1151000

Dyer. 1976. Gen. 2: 944.

Obermeyer. 1992. F.S.A. 5,3: 85–86.

anceps Willd.

(= *S. kraussiana* Meisn.)

Herbaceous climber with tendrils. Stems usually armed with small prickles. Leaves oblong, 5-nerved. Flowers in copious, dense, axillary umbels. Stamens greenish white. Berry globose, the size of a pea. *Flowering November to March*. Forest margins, scrubland. *Reid 725*.

W S C N E

Thuranthos C.H. Wright (s. Afr.:

3 spp.)

1079010

Phillips. 1917. Ann. S. Afr. Mus. 16: 306.

Jessop. 1977. JI S. Afr. Bot. 43: 273.

Obermeyer. 1980. Bothalia 13: 139.

basuticum (E. Phillips) Oberm.

(= *Urginea basutica* E. Phillips,

= *Drimia angustifolia* Baker)

Geophyte, up to 0.9 m high. Leaves usually hysteranthous, linear, 55–160 $\times$ 7–13 mm. Perianth 14–20 mm long, reflexed. Filaments linear-lanceolate, curving inwards around style, forming a cage-like body. *Flowers yellowish green to brownish white; October to November*. Grassland, along streams. *Codd 5768*.

W S C N E

Trachyandra Kunth (s. Afr.: 49 spp.) 0985010

Obermeyer. 1962. Bothalia 7: 669–767.

asperata Kunth var. **asperata**

Perennial herb, up to 1 m high. Leaves straight or twisted. Inflorescence laxly flowered. Pedicels scabrid,

twisted in fruit. Capsule densely and evenly covered with short, gland-tipped tubercles, globose. *Flowers white with brown stripes; July to August.* Grassland, marshy places. *Germishuizen 3265.*

W S C N E

asperata Kunth var. basutoensis (Poelln.) Oberm.

Perennial herb, up to 300 mm tall. Leaves terete. Pedicels twisted, up to 7 mm long. Capsule sparsely covered with short, gland-tipped tubercles, obtriangular in outline. *Flowers white; September to January.* Mountain grassland. *Rauh & Schlieben 9768.*

W S C N E

asperata Kunth var. carolinensis Oberm.

Perennial herb, up to 200 mm tall. Leaves straight, filiform, minutely pubescent. Inflorescence simple or branched, nearly glabrous, few- to many-flowered. Capsule densely and evenly covered with short, gland-tipped tubercles. *Flowers white with reddish brown stripes; October to January.* Grassland, marshy places. *Galpin 12212.*

W S C N E

asperata Kunth var. macowanii (Baker) Oberm.

Perennial herb, up to 300 mm tall. Inflorescence divaricately branched. Pedicels glabrescent, erecto-patent, up to 15 mm long in fruit. *Flowers white; October to January.* Dense grassland, marshy places. *Codd 4710.*

W S C N E

asperata Kunth var. nataglencoensis (Kuntze) Oberm.

Perennial herb, up to 500 mm tall. Inflorescence with ascending branches. Pedicels glabrescent, erecto-patent, up to 15 mm long in fruit. *Flowers white; October to February.* Grassland, marshy places. *Killick & Strey 2554.*

W S C N E

asperata Kunth var. swaziensis Oberm.

Perennial herb, up to 200 mm tall. Leaves straight. Inflorescence densely flowered, densely glandular-hairy. Capsule densely and evenly covered with short, gland-tipped tubercles. *Flowers white with brown stripes; October to February.* Montane grassland. *Gunn sub PRE 28726.*

W S C N E

burkei (Baker) Oberm.

(= *Anthericum burkei* Baker)

Psammophyte, up to 400 mm tall, producing short, aerial stems. Leaves few; leaf bases long, with reticulate thickenings. Inflorescence usually branched. Perianth maculate. *Flowers cream with brown stripes; September to March.* Grassland. *Van Wyk 1719.*

W S C N E

erythrorrhiza (P. Conrath) Oberm.

(= *Anthericum erythrorrhizum* P. Conrath)

Perennial herb, up to 0,8 m high. Roots red, stout, $\pm$ 4 mm in diameter, cylindrical. Leaves flat, somewhat

distichous. Pedicels erect. Capsule globose. *Flowers white; October.* Black turf marshes. *Leendertz 6439.*

W S C N E

gerrardii (Baker) Oberm.

(= *Anthericum gerrardii* Baker)

Robust perennial herb, up to 0,6 m high, with hairy leaves and scabrid-glandular, branched racemes. Capsule $\pm$ 10 mm in diameter when fully developed, berry covered with pectinate, gland-tipped tubercles. *Flowers white; September to October.* Grassy slopes, sides of vleis. *Codd 9393.*

W S C N E

laxa (N.E. Br.) Oberm. var. laxa

(= *Anthericum laxum* N.E. Br.)

Perennial, rather slender herb, up to 0,6 m high. Leaves terete. Inflorescence branches alternate. Scape not clavate at apex. Filaments yellow in middle. *Flowers white, dark-keeled, with 2 yellow spots near base; February to April.* Grassland, sandveld. *Van der Schijff 5329.*

W S C N E

laxa (N.E. Br.) Oberm. var. rigida (Suess.) Roessler

(= *T. laxa* (N.E. Br.) Oberm. var. *erratica* (Oberm.) Oberm.)

Sturdy perennial herb, up to 0,6 m high. Leaves terete. Three lowest branches of inflorescence trichotomous. Scape clavate at apex. Filaments yellow in middle. *Flowers white; January to March.* Grassland, sandveld. *Mauve 4068.*

W S C N E

margaretae Oberm.

Hard, grass-like, perennial herb, up to 0,6 m high. Leaves linear, up to 400 mm long, 2 mm broad. Inflorescence with flowers at first congested near apex. Ovary densely pubescent with erect tawny hairs. *Flowers white with brown stripes; August to November.* Damp grassland. *Buitendag 700.*

W S C N E

reflexipilosa (Kuntze) Oberm.

(= *Anthericum filiforme* Thunb. var. *reflexipilosum* Kuntze)

Perennial herb, up to 0,7 m high. Leaves usually 8 mm wide, flat, upper surface glabrous, lower surface and scape evenly setose, immature scape densely reflexipilose. Pedicels straggling in all directions. *Flowers in irregular groups along rachis; white; October to March.* Moist grassland, swamps or black turf. *Codd 6426.*

W S C N E

saltii (Baker) Oberm. var. saltii

(= *Anthericum saltii* Baker)

Grass-like, perennial herb, up to 500 mm tall. Leaves flat or terete, glabrous or with soft, long hairs and short curly ones. Pedicels erect in fruit, $\pm$ 10 mm long. Scape sharply arcuate below, pushing inflorescence outside

leaf rosette. *Flowers white with brown or green stripes; November to March.* Grassland, bushveld, stony hillsides. *Devenish 631.*

W S C N E

saltii (Baker) Oberm. var. **secunda** (Krause & Dinter) Oberm.

(= *Anthericum secundum* Krause & Dinter)

Grass-like herb, up to 500 mm tall. Leaves flat or terete, glabrous or hairy. Pedicels recurved and often pseudosecund in fruit, $\pm$ 15 mm long. Scape sharply arcuate below, pushing inflorescence outside leaf rosette. *Flowers white with olive-green, brownish stripes; September to February.* Grassland, lowveld, sandy soil. *Mauve sub PRE 38751.*

W S C N E

Tulbaghia L. (s. Afr.: 20 spp.) 1047000

Vosa. 1975. *Annali Bot.* 34: 47–121.

Burbidge. 1978. *Notes R. bot. Gdn Edinb.* 36: 77.

acutiloba Harv.

Geophyte, up to 200 mm tall. Leaves up to 4–5 mm wide, folded and V-shaped in section. Perianth segments markedly reflexed. *Flowers green with corona light brown to purplish brown, with indistinct lobes; August to April.* Grassland, vleis. *Codd & Cross 4349.*

W S C N E

cernua Avé-Lall.

Geophyte, up to 500 mm tall. Perianth segments less than a third as long as broad, flat, apex acute. *Flowers green with corona flame-coloured; September to November.* Grassland. *Devenish 144.*

W S C N E

coddii Vosa & R.B. Burb.

(= *T. poetica* R.B. Burb.)

Geophyte, up to 150 mm tall. Leaves filiform. Umbel 3–5-flowered. *Flowers whitish green and mauve with corona yellow; September to November.* Damp or marshy grassland. *Codd 6746.*

W S C N E

leucantha Baker

(= *T. dieterlenii* E. Phillips)

Geophyte, up to 300 mm tall. Leaves linear, 3–6 mm wide. Perianth segments conspicuously rolled in flower. *Flowers whitish green with corona orange or scarlet, cylindrical, with a serrate margin; September to February.* Grassland, rocky areas. *Codd 4780.*

W S C N E

ludwigiana Harv.

Geophyte. Leaves broader than 8 mm. Style and stigma forming a thick, apical depressed column. *Flowers greenish brown with corona lobes bright yellow to orange, $\pm$ entire; August to December.* Grassland. *Devenish 1474.*

W S C N E

nutans Vosa

Geophyte, up to 200 mm tall. Longest pedicels longer than 50 mm. Inner perianth segments fused to corona for most of its length, segments in 2 widely spaced whorls. *Flowers light green with corona brick-red to dull purple; November to March.* Rocky grassland. *Edwards 4071.*

W S C N E

simmleri P. Beauv.

(= *T. fragrans* I. Verd.)

Geophyte, up to 500 mm tall. Leaves wider than 10 mm. Corona lobes united for at least half their length, same colour as perianth. *Flowers pink or mauve, rarely white; October to February.* Forests, rocky ledges. *Venter 7149.*

W S C N E

transvaalensis Vosa

Geophyte, up to 250 mm tall. Leaves 6–10 mm wide, flat. Perianth segments not very markedly reflexed. *Flowers green with corona bright yellow or orange to brownish yellow; October to December.* Grassland. *Hardy 3946.*

W S C N E

Urginea Steinh. (s. Afr.: 24 spp.) 1080000

Dyer. 1947. *Flower. Pl. Afr.* 26: t. 1027.

Jessop. 1977. *Jl S. Afr. Bot.* 43: 265–319.

altissima (L.f.) Baker

Geophyte, up to 1.5 m high. Bulb epigeal. Leaves flattened, oblong, 200–400 $\times$ 25–40 mm broad. Peduncle longer than 600 mm. Bracts 5 mm or more long. Spur of lowest bract up to 3 mm long. *Flowers white with a green dorsal stripe; October to December.* Wooded hillsides. *Reid 457.*

W S C N E

capitata (Hook.) Baker

Geophyte, up to 1 m high. Leaves linear, 100–240 $\times$ 10–26 mm, usually produced after inflorescence. Inflorescence a $\pm$ globose head. Perianth up to 7 mm long, perianth segments spreading. *Flowers white and with a purple, brown or pink dorsal surface; August to December.* Grassland, among stones. *Behr 560.*

W S C N E

epigea R.A. Dyer

Geophyte, up to 1 m high. Bulb mainly above ground, 100–150 mm in diameter, composed of large fleshy scales. Flowers opening every day, but each flower lasting only one day. Raceme 600 mm long. *Flowers with perianth lobes white and with narrow green keels.* Bushveld. *Van der Merwe 2203.*

W S C N E

indica (Roxb.) Kunth

Geophyte, up to 500 mm tall. Peduncles up to 500 mm long. Pedicels longer than 20 mm. Perianth up to 20 mm long. Filaments linear-lanceolate. *Flowers pale brown with flesh-coloured margins; November to December.* Grassland. *Mauve 4823.*

W	S	C	N	E
---	---	---	---	---

lydenburgensis R.A. Dyer

Geophyte, up to 500 mm tall. Bulb pyriform, solitary or dividing into tight clusters; scales pink. Leaves produced before inflorescence. Pedicels 5 mm long. *Flowers white with a green keel; August to September.* Bush, rock fissures, shallow depressions. *Onderstall 381.*

W	S	C	N	E
---	---	---	---	---

modesta Baker

(= *U. natalensis* Baker,
= *U. pretoriensis* Baker)

Geophyte, up to 300 mm tall. Bulb 10–25 mm long, ovoid to globose, usually with white fleshy scales. Leaves 4–8, linear, usually produced after inflorescence. Pedicels 5–8 mm long, spreading. *Flowers white with a brown dorsal stripe; September to December.* Grassland, rocky slopes. *Hanekom 1860.*

W	S	C	N	E
---	---	---	---	---

multisetosa Baker

Geophyte, up to 0.8 m high. Bulb 25–70(–80) mm long, ovoid to ovoid-oblong with long fibres (often ± 20 –30 mm long). Leaves linear, 120–400 $\times$ 7–14 mm, usually produced after inflorescence. *Flowers in an elongate raceme; brown, yellow or white with brown to black stripes; August to November.* Grassland, sand, shale or among rocks. *Hanekom 1852.*

W	S	C	N	E
---	---	---	---	---

rubella Baker

Geophyte, up to 200 mm tall. Bulb ovoid, 20 mm in diameter. Leaves 4–6, slender, produced together with inflorescence. Peduncles 1–4 to a bulb. Raceme lax, cylindrical. *Flowers white with purplish red margins; September to November.* Vleis. *Devenish 145.*

W	S	C	N	E
---	---	---	---	---

sanguinea Schinz

(= *U. burkei* Baker)

Geophyte, up to 500 mm tall. Bulb (40–)55–90 mm long, usually ovoid with a distinct neck. Scales tightly packed, red. Leaves linear-lanceolate, 250–300 $\times$ 4–10 mm, usually produced after inflorescence. *Flowers white with or without a brown dorsal stripe; September to October.* Woodland, grassland, hillsides. *Codd 6152.*

W	S	C	N	E
---	---	---	---	---

MUSACEAE

Plants with stems formed by imbricate bases of petioles. Leaves spirally produced, large, with thick midrib and numerous pinnately-parallel nerves extending to margin. Flowers mostly unisexual, clustered and subtended by large, spathaceous bracts. Perianth elongated, at first narrowly tubular, soon splitting down one side, variously toothed at apex, with 1 free, opposing segment. Stamens 5. Ovary inferior, 3-locular. Fruit fleshy, indehiscent.

Ensete Horan. (s. Afr.: 1 sp.)

1318010

Dyer. 1941. *Flower. Pl. Afr.* 21: t. 810.
Baker & Simmonds. 1954. *Kew Bull.* 1953: 405, 574.
Coates Palgrave. 1977. *Trees of southern Africa*: 88.

pink. Flowers in massive, pendulous racemes, protected by large, saucer-shaped maroon bracts. *Flowers maroon.* Forest, along streams, in forested ravines. *Grewcock 26435.*

W	S	C	N	E
---	---	---	---	---

ventricosum (Welw.) E.E. Cheesm.

(= *Musa davyae* Stapf)

Large, fleshy tree, up to 12 m high, with a head of banana-like leaves. Leaves 2–5 $\times$ 1 m, midrib rose-

NAJADACEAE

Aquatic herbs, monoecious or dioecious. Upright branches forking repeatedly, brittle, smooth or prickly. Leaves sessile, in pseudo-whorls, with an open folded basal sheath; lamina linear, dentate. Flowers unisexual, small; male flower a single stamen; female flower a single, ovoid carpel, surrounded by a spathe, or naked. Fruit a nut.

Najas L. (s. Afr.: 3 spp.)

0064000

Obermeyer. 1966. F.S.A. 1: 82–85.

Triest. 1987. Memoires Academie R. des Sciences D'outre-mer.

Classe des sciences naturelles et médicales 21.4: 44–52.

graminea Delile

Perennial aquatic herb, shoots 100–600 mm long. Stems smooth, herbaceous. Leaves filiform with 40–60 microscopic teeth, septa of leaf distinct. Stigmas 2. *Flowers green; February*. Fresh water, dams. *Mauve 4342*.

W S C N E

horrida A. Br.(= *N. pectinata* auct. non (Parl.) Magnus)

Perennial, aquatic herb, up to 1 m high, submerged, forming dense brownish clumps. Stems smooth, herba-

ceous. Leaves with 6–12 macroscopic, triangular, spine-tipped teeth, septa of leaf distinct. Stigmas 2. *Flowers green; February to May*. Fresh water. *Mauve & Vahrmeyer 4303*.

W S C N E

marina L. subsp. armata (Lindb. f.) H. Horn(= *N. marina* L. subsp. *delilei* (Rouy) Maire)

Annual aquatic herb, up to 0.6 m high. Stems usually with scattered prickles, succulent. Septa of leaf indistinct. Stigmas 3. Brackish water. *Brynard & Pienaar 4312*.

W S C N E

ORCHIDACEAE

Herbs, often with rhizomes or corms. Leaves alternate, mostly basal, spirally set or in 2 ranks, with parallel veins. Flowers irregular, with a complex structure. Perianth in 2 whorls; outer 3 (sepals) mostly coloured and petaloid, odd one in front (anticous) or by twisting of ovary (posticous), often hooded (galeate); inner 3 with 2 lateral segments often different from odd one which forms a lip or labellum; lip when anticous often lobed, sometimes spurred, when posticous then sometimes galeate. Stamen highly modified, fused with style into a column; pollen united into waxy masses (pollinia) and concealed by an anther cap. Ovary inferior, 1-locular. Fruit a capsule. Seeds minute, numerous.

Key after Stewart *et al.* in Wild orchids of southern Africa: 52–55 (1982).

- 1a Plants terrestrial, or, if growing on trees or rocks, having fleshy tubers 2
- 1b Plants epiphytic on trees or shrubs, or growing on rocks, but if so without tuberous roots 30
- 2a Pollinia borne in pouch-like structures on face of column, without a removable anther cap 3
- 2b Pollinia borne at tip of column, under a removable anther cap 27
- 3a Lip bearing 2 spurs or sacs at base; hooded lip on upper side of flower **Satyrrium**
- 3b Lip with a single spur or spurless 4
- 4a Lip with a fringed margin 5
- 4b Lip not fringed; if lobed, then with fewer than 6 lobes 7
- 5a Dorsal sepal with a spur at base **Herschelianthe**
- 5b Dorsal sepal without a spur 6
- 6a Leaves 1 or 2 **Holothrix**
- 6b Leaves numerous in a basal rosette **Stenoglottis**
- 7a Lateral sepals each bearing a spur or sac **Disperis**
- 7b Lateral sepals without a spur or sac 8
- 8a Lip with a spur at base 9
- 8b Lip without a spur 16
- 9a Stigmas situated on 2 club-shaped organs that project forwards from front of column 10
- 9b Stigmas 1 or 2, situated on underside of column or at base of column 14
- 10a Flowers green or green and white 11
- 10b Flowers white, pink or lilac, often spotted with a darker colour 13
- 11a Side lobes of lip fringed **Centrostigma**
- 11b Side lobes of lip, if present, not fringed 12
- 12a Lateral sepals and lower lobes of petals fused to stigmatic arms **Bonatea**
- 12b Lateral sepals, lower lobes of petals and stigmatic arms all free from each other **Habenaria**
- 13a Leaves many in basal rosette; petals smaller than sepals and free from them **Stenoglottis**
- 13b Leaves 1 or 2 at base of flowering stem; petals as large as sepals and adhering to margin of dorsal sepal **Cynorkis**

14a	Stem densely leafy throughout its length, flowers partially concealed by leaves	Brachycorythis
14b	Stem not leafy, but bearing occasional sheaths or bracts	15
15a	Petals longer than sepals; inflorescence erect, arising between a pair of leaves that lie flat on ground, or apparently leafless at flowering time	Holothrix
15b	Petals shorter than sepals; inflorescence curved over, tip pointing towards ground	Schizochilus
16a	(8) Lip simple or lobed, but without an appendage; viscidia borne close to column	17
16b	Lip complex, with a conspicuous appendage or with viscidia borne at apices of conspicuous arms of column	26
17a	Stigmas 2, minute and club-shaped	Stenoglottis
17b	Stigma 1, not club-shaped	18
18a	Leaves grass-like, basal	19
18b	Leaves not grass-like	21
19a	Flowers bright yellow; inflorescence nodding	Schizochilus
19b	Flowers not yellow; inflorescence erect	20
20a	Petals falcate; flowers blue or white with blue veins	Herschelianthe
20b	Petals oblong or ovate, flowers without any blue colour	Disa
21a	Pollinia both attached to 1 viscidium	Monadenia
21b	Pollinia each attached to a separate viscidium	22
22a	Lip insignificant, shorter than and clasping base of column	Brownleea
22b	Lip as long as or longer than column	23
23a	Lip distinctly 3-lobed	24
23b	Lip not lobed or with minute side lobes	25
24a	Stem densely leafy throughout its length; leaves gradually merging with bracts	Brachycorythis
24b	Stem not leafy, but bearing a few sheaths between basal leaves and bracts	Schizochilus
25a	Leaves 1 or 2, basal	Neobolusia
25b	Leaves several	Disa
26a	(16) Dorsal sepal and petals forming a shallow, concave hood	Pterygodium
26b	Dorsal sepal and petals forming a deep concave hood; lateral sepals often fused at base	Corycium
27a	(2) Plants with a large single leaf, appearing only after flowering	Nervilia
27b	Plants with 1 or more leaves that are always present at flowering time	28
28a	Column united to lip for most of its length; spur longer than lip	Calanthe
28b	Column free from lip; spur shorter than lip or absent	29
29a	Flowering stem arising from apex of growth; lip without a spur; stems pseudobulbous; leaves thin	Liparis
29b	Flowering stem arising separately from leafy shoot; lip 3-lobed; pseudobulbs consisting of more than 1 node, each new growth with several leaves	Eulophia
30a	(1) Plants with a small fan of laterally compressed leaves; flowers minute, yellowish brown, more than 50 per inflorescence	Oberonia
30b	Plants with flat, keeled or cylindrical leaves, not laterally compressed	31
31a	Plants with pseudobulbs	32
31b	Plants without pseudobulbs	34
32a	Inflorescence arising from base of pseudobulb; pseudobulbs 2-leaved	Bulbophyllum
32b	Inflorescence arising from apex of pseudobulb	33
33a	Flowers carried with lip lowermost; dorsal sepal longer than 20 mm	Ansellia
33b	Flowers carried with lip uppermost; dorsal sepal shorter than 15 mm	Polystachya
34a	Sepals and petals yellow with purple markings; lip white and also marked	Acampe
34b	Sepals, petals and lip without markings	35
35a	Lip broad at base, encircling column	Angraecum
35b	Lip variously shaped, but inserted below column, not encircling it	36
36a	Inflorescence bearing a solitary flower, rarely 2-flowered	Jumellea
36b	Inflorescence bearing 4 or more flowers	37
37a	Flowers white	38
37b	Flowers green, beige, brown or straw-coloured, sometimes transparent	40
38a	Sepals and petals narrow and pointed, similar to lip	Cyrtorchis
38b	Sepals and petals obtuse or apiculate, different in shape and size from lip	39
39a	Lip oblong or elliptic; leaves flat	Aerangis
39b	Lip triangular; leaves V-shaped in cross-section	Mystacidium
40a	Apical half of lip distinctly 3-lobed, side lobes sometimes fringed	Tridactyle
40b	Apical half of lip broad or pointed, but not lobed	41
41a	Spur curved forward below lip; leaves spaced at least 10 mm apart	Diaphananthe
41b	Spur straight or slightly curved, hanging down below lip; leaves closely arranged	Mystacidium

Acampe Lindl. (s. Afr.: 1 sp.) 1824000Stewart *et al.* 1982. Wild orchids of southern Africa: 255–256.**praemorsa (Roxb.) Blatter & Maccann**(= *A. pachyglossa* Rchb. f.)

Robust epiphyte. Stems up to 300 mm long. Leaves thick and fleshy. *Sepals and petals yellow with purple markings. Lip white and also marked. Flowering November to March. Trees along rivers and near rock outcrops. Van der Schijff 3620.*

W S C N E

Aerangis Rchb. f. (s. Afr.: 3 spp.) 1830000Stewart *et al.* 1982. Wild orchids of southern Africa: 262–264.**somalensis (Schltr.) Schltr.**

Epiphyte. Stems up to 50 mm long. Leaves thick with conspicuous, reticulate, darker-coloured venation. Lip smooth at base. Spur 100–120 mm long. *Flowers white, sometimes tinged with pink; February to May.* On trees and at base of branching shrubs, in small patches of woodland along streams and near rock outcrops. *Scheepers 251.*

W S C N E

verdictii (Rchb. f.) Schltr.(= *A. erythrum* Kraenzl.,
= *A. kotschyana* Rchb. f.)

Epiphyte. Stems up to 150 mm long. Leaves very thick, greyish green, sometimes with a reddish margin, but venation not distinct. Lip with 2 longitudinal ridges in mouth. Spur 120–160 mm long. *Flowers white; December to January.* On branches or trunks of trees, or on rocks, in rather dry woodland and montane scrub. *Hood sub PRE 31727.*

W S C N E

Angraecum Bory (s. Afr.: 6 spp.) 1828000Stewart *et al.* 1982. Wild orchids of southern Africa: 256–260.**chamaeanthus Schltr.**

Tiny epiphyte, with minute stems and 3 or 4 narrow leaves up to 16 mm long. Inflorescence shorter than 20 mm. *Flowers less than 2 mm in diameter; white; July to June.* On twigs and branches of cool, moist forests. *Venter 11036.*

W S C N E

conchiferum Lindl.

Epiphyte. Stems up to 300 mm long. Leaves narrowly strap-shaped. Lip almost orbicular, white. *Flowers with cream sepals and petals; September to November.* In cool, moist habitats in forest. *Kluge 1375A.*

W S C N E

sacciferum Lindl.

Epiphyte, with short, narrow stems bearing 4–8 narrow, ligulate leaves. Flowers less than 10 mm in diameter.

Flowering October to April. Cool, moist forests. *Van der Schijff 4685.*

W S C N E

stella-africae Cribb

Epiphytic herb. Stem 1.0–2.5 mm long. Leaves linear, 30–50 × 6–8 mm. Inflorescence 1-flowered. Petals lanceolate, acute, 20 × 3 mm. Lip ovate-elliptic, 26 × 15 mm. Callus at base of lip ridge-like, tapering to apex. *Flower white with a green ovary.* PRE specimens on loan.

W S C N E

Ansellia Lindl. (s. Afr.: 1 spp.) 1568000

Cribb. 1984. F.T.E.A. Orchidaceae: 404.

africana Lindl.(= *A. gigantea* Rchb. f. var. *gigantea*,
= *A. gigantea* Rchb. f. var. *nilotica* (Baker) Summerh.)

Erect epiphyte, up to 1.25 m high. Pseudobulbs fusiform, long, many-leaved. Lip lacking a spur. Sepals and petals similar. Petals elliptic, rounded at apex. *Flowers yellow, ± heavily blotched with dark maroon; August to December.* Open woodland or wooded grassland. *Rauh & Schlieben 9713.*

W S C N E

Bonatea Willd. (s. Afr.: 10 spp.) 1422020Stewart *et al.* 1982. Wild orchids of southern Africa: 97–102.
McDonald. 1991. S.A.O.J. 22.2: 29–32.**bracteata McDonald & McMurtry**(= *B. liparophylla* Schelpe, nom. nud.)

Terrestrial herb, up to 400 mm tall. Leaves with at least 3 parallel veins, elliptic, acuminate, up to 85 × 26 mm. Petal lobes shorter than 12 mm. *Flowers green and white; February.* Grassland. *McMurtry 2981.*

W S C N E

polypodantha (Rchb. f.) L. Bolus(= *Habenaria insignis* Schltr.)

Slender, terrestrial herb, up to 330 mm tall. Spur shorter than 45 mm, slightly swollen. Side lobes of lip very narrowly linear, attenuate, 30–35 mm long, white. *Flowers white and pale green; February to April.* Thorn scrub. *Schweickerdt 1061.*

W S C N E

porrecta (Bolus) Summerh.

A fairly robust, leafy herb, up to 0.65 m high. Leaves withered at flowering time in midwinter, narrowly oblong, up to 110 mm long. Spur swollen towards apex, 30–35 mm long. *Flowers green and white; June to October.* Grassland and scrub. *Van Wyk sub PRE 35151.*

W S C N E

pulchella Summerh.

Slender, terrestrial herb, up to 320 mm tall. Spur 60–70 mm long, swollen towards apex. Lip with side lobes

filiform, ± 20 mm long, midlobe very narrowly linear, almost filiform. *Flowers green and white; April to June.* In bush. *Streya* 3789A.

W S C N E

saundersioides (Kraenzl. & Schltr.) Cortesi
(= *Habenaria umvotensis* Rolfe)

Slender, terrestrial herb, up to 340 mm tall. Leaves narrowly elliptic, acute, up to 140×25 mm. Dorsal sepal 9–13 mm long. Side lobes of lip linear, ± 30 mm long. *Flowers white and green; May to July.* In shade in wooded ravines and savanna. *Bremekamp* sub TRV 27469.

W S C N E

speciosa (L.f.) Willd. var. **speciosa**
(= *B. boltonii* Bolus)

Robust, leafy herb, up to 1 m high. Leaves flat, with 1 central vein. Upper petal lobe 15–25 mm long. Lower petal lobe oblanceolate to linear, usually falcate. *Flowers green and white; January to March.* Savanna. *Schlieben* 9592.

W S C N E

speciosa (L.f.) Willd. var. **antennifera** (Rolfe) Somerville
(= *B. antennifera* Rolfe)

Robust, leafy herb, up to 1 m high. Leaves flat, with 1 central vein. Upper petal lobe 15–25 mm long. Lower petal lobe narrowly linear throughout, slightly curved. *Flowers green and white; January to May.* Thorn savanna. *Venter* 1906.

W S C N E

Brachycorythis Lindl. (s. Afr.: 7 spp.) 1428000
Stewart *et al.* 1982. Wild orchids of southern Africa: 72–75.

conica (Summerh.) Summerh. subsp. **transvaalensis** Summerh.

Terrestrial herb, up to 400 mm tall. Leaves numerous, lanceolate, up to 50×12 mm. Lip broadest at apex, without distinct side lobes. Spur ± 4 mm long. *Flowers pink with purple spots on lip; March.* Grassland. *Van Nouhuys* sub PRE 39454.

W S C N E

ovata Lindl.

Terrestrial herb, up to 400 mm tall. Leaves numerous, lanceolate, up to 70×22 mm. Lip 3-lobed at apex, central keel white with purple spots. *Flowers pink to pale mauve; September to February.* Grassland. *Retief* 520.

W S C N E

pleistophylla Rchb. f.

Terrestrial herb, up to 1 m high. Lip 2-lobed at apex or with 2 large, rounded side lobes and a central tooth. Keel white or pinkish purple, not spotted. *Flowers rose-pink or purple; December.* Grassland and woodland margins. *McMurtry* 4261.

W S C N E

pubescens Harv.

Terrestrial herb, up to 370 mm tall. Leaves with numerous, short, pale hairs on surface. Lip pink with a few purple spots and a basal yellow callus. *Flowers pink and brownish purple on reverse; November to January.* Grassland. *Codd* 4795.

W S C N E

tenuior Rchb. f.

Terrestrial herb, up to 210 mm tall. Leaves numerous, lanceolate, up to 30×13 mm. Spur ± 6 mm long. Lip narrowing towards apex, without distinct side lobes. *Flowers pink; January to March.* Grassland. *Van der Meulen* 929-198.

W S C N E

Brownleea Harv. ex Lindl. (s. Afr.:

5 spp.)

1433000

Stewart *et al.* 1982. Wild orchids of southern Africa: 154–157.

coerulea Harv. ex Lindl.

Terrestrial herb, up to 0.6 m high, with (3–)6–15(–30) flowers. Leaves 3, lanceolate, wider than 10 mm. Spur gradually decurved. *Flowers mauve with deep purple spots on hood; February to May.* Among boulders, growing in deep shade. *Krynauw* 275.

W S C N E

galpinii Bolus subsp. **galpinii**

Terrestrial herb, up to 500 mm tall. Flowers in an apical head or at least apically congested. Petals expanded apically, margins crenulate, spreading. Lateral sepals 6–7 mm long. Lip shorter than 1.5 mm. *Flowers white with small purple spots; February to March.* Damp grassland, streambanks or seepages, in full sun. *Linder* 3198.

W S C N E

parviflora Harv. ex Lindl.

(= *B. transvaalensis* Schltr.)

Up to 0.6 m high. Dorsal sepal shorter than 6 mm. Flowers in dense to rarely lax, cylindrical spikes. Spur sharply decurved. *Flowers white; February to April.* Grassland, full sun and often between rocks. *Mogg* 37680.

W S C N E

Bulbophyllum Thouars (s. Afr.:

3 spp.)

1705000

Stewart *et al.* 1982. Wild orchids of southern Africa: 218–220.

malawiense Morris

Epiphyte. Pseudobulbs close together. Rhachis cylindrical, bearing flowers in 3 ranks. Flowers 4–6 mm in diameter. *Flowers yellowish green with numerous small purplish warts; February to March.* Mountain tops. *Netshiungani* 847.

W S C N E

sandersonii (Oliv.) Rchb. f.
(= *Megaclinium sandersonii* Oliv.)

Epiphyte. Pseudobulbs spaced 30–40 mm apart. Inflorescence bearing 6–16 flowers. Rhachis flattened, bearing flowers in 2 rows, 1 on each surface. Flowers 6–9 mm in diameter. *Flowers dull violet or light green, overlaid with purplish dots; October to February.* On rocks and trees in forests. *Van der Schijff 4680.*

W S C N E

Calanthe R. Br. (s. Afr.: 1 sp.) 1631000

Stewart *et al.* 1982. Wild orchids of southern Africa: 215.

sylvatica (Thouars) Lindl.

(= *C. natalensis* (Rchb. f.) Rchb. f.)

Terrestrial herb, up to 0.6 m high. Column united to lip for most of its length. Spur longer than lip. *Flowers whitish or pale mauve, fading to an apricot-orange colour; January to March.* Forest floors, often near rivers or in seepage zones and always in deep shade. *Grewcock sub PRE 3592.*

W S C N E

Centrostigma Schltr. (s. Afr.: 1 sp.) 1422010

Stewart *et al.* 1982. Wild orchids of southern Africa: 102–103.

occultans (Welw. ex Rchb. f.) Schltr.

(= *C. schlechteri* (Kraenzl.) Schltr.)

Robust terrestrial herb, up to 500 mm tall. Lip 3-lobed from an undivided base, $\pm$ 20 mm long, apices of side lobes divided into many slender filaments. *Flowers green or pale green; December to February.* Marshy grassland. *Breyer sub TRV 17779.*

W S C N E

Corycium Sw. (s. Afr.: 15 spp.) 1440000

Stewart *et al.* 1982. Wild orchids of southern Africa: 190–195.

dracomontanum Parkman & Schelpe

Terrestrial herb, up to 0.54 m high. Leaves lanceolate, up to 170 mm long. Lip greenish. Dorsal sepal above 4 mm long and 3 mm broad. *Flowers green, tinged with purple; December to March.* Grassland. *Germishuizen 5066.*

W S C N E

nigrescens Sond.

Terrestrial herb, up to 400 mm tall. Inflorescence dense, flowers numerous. Lateral sepals joined on lower margin for most of their length. *Flowers with petals purple-brown to almost black; December to February.* Grassland. *Venter 1502.*

W S C N E

Cynorkis Thouars (s. Afr.: 2 spp.) 1421000

Stewart *et al.* 1982. Wild orchids of southern Africa: 79–80.

kassneriana Kraenzl.

Terrestrial herb, up to 300 mm tall. *Flowers lilac with darker spots and streaks on lip, glandular-hairy on outer surface. Flowering January to April.* On mossy banks and among rocks on forest floor and in pine plantations. *Venter 7727.*

W S C N E

Cyrtorchis Schltr. (s. Afr.: 2 spp.) 1835010

Stewart *et al.* 1982. Wild orchids of southern Africa: 271–272.

arcuata (Lindl.) Schltr.

(= *Listrostachys arcuata* (Lindl.) Rchb. f.)

Epiphyte. Stems up to 400 mm long. Leaves wider than 10 mm. *Flowers large with spurs 40–60 mm long, turn orange with age; white; February to March.* Forest. *Scheepers 900.*

W S C N E

praetermissa Summerh. subsp. **praetermissa**

Epiphyte. Leaves 10 mm wide or less, deeply V-shaped in cross-section. Flowers small with straight spurs, 20–30 mm long and often hooked at tip. *Flowers white; October to January.* In upper branches of shady trees near rivers and in mountainous areas. *Hemm 392.*

W S C N E

Diaphananthe Schltr. (s. Afr.: 4 spp.) 1828040

Stewart *et al.* 1982. Wild orchids of southern Africa: 269–270. Linder. 1989. Kew Bull. 44: 317–319.

caffra (Bolus) H.P. Linder

(= *Margelliantha caffra* (Bolus) Bolus, = *Mystacidium caffrum* (Bolus) Bolus)

Dwarf, almost stemless epiphyte, with numerous white-streaked greyish roots, with leaves 2–4, linear or narrowly strap-shaped. Inflorescence bearing 8–12 flowers very close together. *Flowers white; September to January.* Forest. *Scheepers 1193.*

W S C N E

Disa P.J. Bergius (s. Afr.: 96 spp.) 1434000

Stewart *et al.* 1982. Wild orchids of southern Africa: 103–143.

aconitoides Sond.

Terrestrial herb, up to 0.6 m high. Sepals 5–8 mm long, dorsal sepal galeate; spur longer than lateral sepals, 6–10 mm long. Lip narrowly elliptic. *Flowers whitish or pale mauve with darker spots; December.* Grassland. *Bredenkamp 629.*

W S C N E

alticola H.P. Linder

Terrestrial herb, up to 170 mm tall. Spur conical, 1–2 mm long. Galea and petals with reddish mauve spots near apices. Lip lorate, 3–4 mm long. *Flowers white; December to February.* Wet, often shallow soil in full sun. *Linder 2003.*

W S C N E

amoena *H.P. Linder*

Terrestrial herb, up to 0,6 m high. Sepals 13–20 mm long, angled forwards, dorsal sepal shallowly galeate. Spur slender, horizontal, decurved at apex. Lip narrowly oblanceolate. *Flowers deep pink; January to March*. Dry, stony grassland. *Krynauw 487*.

W S C N E

aristata *H.P. Linder*

Terrestrial herb, up to 500 mm tall. Sepals 18–25 mm long, dorsal sepal shallowly galeate with a horizontal slender spur, 8–18 mm long, acute, lateral sepals lorate. Lip linear flexuose. *Flowers pink; November to January*. On rock ledges and in rock crevices. *Venter sub PRE 60395*.

W S C N E

chrysostachya *Sw.*

Terrestrial herb, up to 1 m tall. Inflorescence a slender, tapering spike. Dorsal sepal galeate with a pendent, clavate, acute, much inflated spur 5–11 mm long. *Flowers bright orange and yellow; November to January*. Damp or marshy areas. *Devenish 476*.

W S C N E

clavicornis *H.P. Linder*

Terrestrial herb, up to 400 mm tall. Dorsal sepal galeate, galea 5,5 mm tall, 4 mm deep. Spur ascending to erect, slender, cylindrical, 7 mm long, apex strongly clavate. Lip narrowly lorate, 4,5 × 0,5 mm, acute. *Flowers salmon-coloured; February*. Wet soil. *Lavrano 9358*.

W S C N E

cooperi *Rchb. f.*

Terrestrial herb, up to 0,7 m high. Lip broadly spatulate. Sepals 10–14 mm long, dorsal sepal galeate with an ascending spur, 34–45 mm long, lateral sepals reflexed at anthesis. *Flowers white or cream with green lips; January to March*. Dry to damp grassland. *Devenish 1732*.

W S C N E

cornuta (*L.*) *Sw.*

(= *D. macrantha* Sw.)

Terrestrial herb, up to 1 m high. Spur 10–20 mm long, straight or gradually decurved. Inflorescence with numerous resupinate flowers. Lip lorate to obovate. *Flowers purple to silvery green; January*. Grassland. *Devenish 410*.

W S C N E

extinctoria *Rchb. f.*

Terrestrial herb, up to 500 mm tall. Spur not reaching base of dorsal sepal, shorter than 5 mm. Sterile leaves 5–8(–12) mm wide. Petals obliquely ovate. *Flowers bright red with a yellow or white lip; November to February*. In damp grassland and swamps. *Meeuse 9401*.

W S C N E

fragrans *Schltr.*

Terrestrial herb, up to 500 mm tall. Leaves usually with purple bars around sheaths. Spur slender, 5–10 mm long. Petals oblanceolate, obtuse. *Flowers white to pale*

lilac or carmine, usually mottled; March to April. Grassland in full sun. *Germishuizen 1286*.

W S C N E

hircicornis *Rchb. f.*

(= *D. laeta* Rchb. f.)

Terrestrial herb, up to 0,6 m high. Petals obovate-oblong, truncate. Sepals 5,0–7,5 mm long, dorsal sepal galeate with a hooked spur. Lip linear to narrowly elliptic. *Flowers purple; January*. Swampy areas. *Van der Merwe 290*.

W S C N E

nervosa *Lindl.*

(= *D. fanniniiae* Harv.)

Terrestrial herb, up to 0,8 m high. Dorsal sepal longer than 15 mm. Petal apices often reflexed out of galea. Lip linear, often widened towards apex. *Flowers pink with purple spots at apices of petals; January to March*. Dry, usually stony, grassland. *Schlieben 9426*.

W S C N E

oreophila *Bolus* subsp. **oreophila**

Terrestrial herb, up to 350 mm tall, generally flexuose. Leaves 1–3 mm wide. Sepals shorter than 10 mm; dorsal sepal 4–6 mm long. Spur 5–10 mm long. *Flowers white or pink; January*. Occasional in rock crevices and on ledges in cave sandstone. *Van der Merwe 1124*.

W S C N E

patula *Sond.* var. **patula**

Terrestrial herb, up to 300 mm tall. Inflorescence generally wider than 30 mm. Dorsal sepal longer than 10 mm. *Flowers pink with petals with purplish spots near apices*. Stony slopes. *Harding sub PRE 35539*.

W S C N E

patula *Sond.* var. **transvaalensis** *Summerh.*

(= *D. gerrardii* Rolfe)

Terrestrial herb, up to 0,6 m high. Inflorescence narrower than 35 mm. Dorsal sepal shorter than 10 mm and spur longer than 8 mm. *Flowers pink with purplish spots near apices of petals; January to March*. In dry to slightly damp grassland. *Cameron 296*.

W S C N E

polygonoides *Lindl.*

Terrestrial herb, up to 0,7 m high. Inflorescence cylindrical, somewhat tapering, 30–170 mm long with numerous flowers. Spur (1,5–) 3,3–4,5 mm long. Petals narrowly obovate, acute. *Flowers red; November to March*. Grassland, marshy habitats. *Venter 412*.

W S C N E

rhodantha *Schltr.*

Terrestrial herb, up to 0,6 m tall. Inflorescence imbricate with 20–30 flowers. Spur, particularly in old flowers, ascending. Lip pendent, oblanceolate. *Flowers*

pink to red; December to February. On grass tussocks in swamps or along streambanks. *Devenish 466*.

W S C N E

saxicola Schltr.

Terrestrial herb, up to 400 mm tall. Sepals shorter than 10 mm, dorsal sepal galeate with a terete, gently decurved spur 4–10 mm long. Lip linear-spathulate. *Flowers white with purple markings on hood; October to March*. In moss on rock ledges and in rock crevices. *Retief & Herman 69*.

W S C N E

stachyoides Rchb. f.

(= *Monadenia leydenburgensis* Kraenzl.)

Terrestrial herb, up to 400 mm tall. Spur dorsoventrally flattened, 2–6 mm long. Sepals 4–7 mm long, dorsal sepal angled forwards. Lip lorate, 4–5 mm long. *Flowers purple with apices of petals and lip white; November to February*. Dry grassland in full sun. *Venter 7233*.

W S C N E

versicolor Rchb. f.

Terrestrial herb, up to 500 mm tall. Sterile leaves (10–)20–30(–40) mm wide. Spur reaching below base of dorsal sepal, longer than 4.5 mm. *Flowers mottled pink; December to February*. Damp to dry grassland. *Linder 3179*.

W S C N E

welwitschii Rchb. f.

(= *D. breyeri* Schltr.)

Terrestrial herb, up to 500 mm tall. Spur shorter than dorsal sepal. Petals bilobed, anterior lobe ovate, posterior lobe one-third taller, oblanceolate, obliquely truncate. *Flowers bright red; January*. Damp areas. *Breyer sub TRV 17784A*.

W S C N E

woodii Schltr.

Terrestrial herb, up to 0.7 m high. Inflorescence cylindrical with numerous flowers. Spur 0.8–1.5(–2.5) mm long, reaching below base of galea. Petals narrowly obovate, acute. *Flowers yellow; September to November*. Grassland in marshes. *Buitendag 710*.

W S C N E

zimbabweensis H.P. Linder

(= *D. rungewensis* Schltr. subsp. *rhodesiaca* (Summerh.) Summerh.)

Terrestrial herb, up to 300 mm tall. Spur 2.5–4.0 mm long, clavate, ascending. Sepals 2.5–4.0 mm long, dorsal sepal galeate. *Flowers pink to brown; January*. Shallow soil over bedrock. *Reid 850*.

W S C N E

zuluensis Rolfe

Terrestrial herb, up to 0.6 m high. Spur sharply decurved or reflexed. Sepals 10–15 mm long, dorsal sepal galeate. Petals narrowly oblong. Lip lorate.

Flowers mauve-pink; January. Swampy areas. *Goldblatt 6858*.

W S C N E

Disperis Sw. (s. Afr.: 26 spp.)

1437000

Stewart *et al.* 1982. Wild orchids of southern Africa: 195–210.

anthoceros Rchb. f.

(= *D. humadryas* Schltr.)

Herb, up to 200 mm tall. Leaves cauline, 2, opposite. Dorsal sepal with a narrowly, elongate hood, 10–12 mm long. Lip with a short folded limb, appendage bilobed at tip. *Flowers white with a lilac flush; February to March*. Forest floor. *Hardy, Retief & Herman 5349*.

W S C N E

cardiophora Harv.

Terrestrial herb, up to 200 mm tall. Petals only slightly extending width of hood, pale green, tipped with purple, outer surface exposed to view. *Flowers white and green with dull purple at tips; January*. Grassland. *Berry 55*.

W S C N E

concinna Schltr.

Terrestrial herb, up to 250 mm tall. Flowers 1–3. Dorsal sepal with a shallow rounded hood, up to 3 mm deep. Lip with a folded, ovate-oblong limb. *Flowers pinkish rose; January to March*. In marshy situations. No specimens in PRE.

W S C N E

cooperi Harv.

(= *D. allisonii* Rolfe,
= *D. buchananii* Rolfe)

Terrestrial herb, up to 400 mm tall. Dorsal sepal with a rounded hood, 5–8 mm deep. Rostellum arms wide and bent, often twisted. Petals spotted with purple and green warts on outer margin. *Flowers whitish or pinkish purple, often tinged with green; March*. Damp places in grassland and temporary vleis. *Drews 244*.

W S C N E

disaeformis Schltr.

Terrestrial herb, up to 180 mm tall. Hood of dorsal sepal elongated and tipped backwards. Lateral sepals deflexed. Limb of lip broadly triangular, appendage ligulate, papillose at apex. *Flowers white, sometimes tinged with purple, lacking green spots; June*. In grass and scrub. *Venter sub PRE 665284*.

W S C N E

fannini Harv.

Terrestrial herb, up to 450 mm tall. Lateral sepals longer than 10 mm. Dorsal sepal a deep broad hood, 12–20 mm long. Lip linear, dilated in centre and lobed and papillose at apex, appendage ovate, green, shorter than limb. *Flowers white, flushed pink or green; January to March*. On floor of forests and pine plantations. *Germishuizen 3809A*.

W S C N E

***lindleyana* Rchb. f.**

Terrestrial herb, up to 400 mm tall. Leaf solitary, half-way up stem, very shiny. Flower bracts narrowly ovate. Dorsal sepal with a conical, obtuse sac, 8–10 mm deep. Petals with outer margin wavy. *Flowers white or cream, sometimes flushed with pink; December to January.* On the floor of forests and pine plantations. Kluge 1132.

W S C N E

***micrantha* Lindl.**

Glabrous terrestrial herb, up to 180 mm tall. Dorsal sepal with a broadly rounded hood, 3 mm long. Lateral sepals deflexed, 3 mm long, with a short conical spur above middle. *Flowers white or pink and green; February to April.* In shady situations on forest floor. Codd 3771.

W S C N E

***renibractea* Schltr.**

Terrestrial herb, up to 300 mm tall. Petals flaring on either side of dorsal sepal to make a broad, shallow hood, heavily marked with purplish granules, inner surface exposed to view. *Flowers green, pink or brown; December to February.* Grassland. Krynanw 1039.

W S C N E

***stenoplectron* Rchb. f.**

(= *D. anomala* Schltr.,
= *D. natalensis* Rolfe)

Terrestrial herb, up to 300 mm tall. Dorsal sepal hooded, hood up to 10 mm deep. Rostellum arms narrow and straight. *Flowers deep purple and green, sometimes dull white or dirty pink tinged with purple; February to March.* Grassland, often on slopes. Cameron 368.

W S C N E

***thorncroftii* Schltr.**

Terrestrial herb, up to 250 mm tall. Hood of dorsal sepal shallow and rounded. Petals heavily marked with green spots and with a crenulate outer margin. *Flowers white or pink; November to December.* On forest floor. Kluge 2314B.

W S C N E

***tysonii* Bolus**

(= *D. bicolor* Rolfe,
= *D. kermesina* Rolfe)

Terrestrial herb, up to 400 mm tall. Flowers 2–14. Dorsal sepal with a deep hood 5–8 mm long, often tipped backwards in apical half. *Flowers pink or deep rose; January to March.* Common in grassland. Cameron 430.

W S C N E

***virginialis* Schltr.**

(= *D. nelsonii* Rolfe)

Terrestrial herb, up to 250 mm tall. Leaves cauline, 2, subopposite. Dorsal sepal and petals forming a shallow hood, less than 5 mm deep. Lip terminating in 4 spreading lobes. *Flowers white, pink or rose-coloured; February.* On floor of forests, wattle and pine plantations. Schlechter 4453.

W S C N E

***wealii* Rchb. f.**

(= *D. flava* Rolfe,
= *D. gracilis* Schltr.)

Terrestrial herb, up to 200 mm tall. Dorsal sepal with a rounded hood $\pm$ 10–12 mm in diameter; lateral sepals spreading, hooked at tip. Rostellum arms cartilaginous, curved or bent. *Flowers white with green markings; January to February.* Common in moist places in grassland. Lavranos 9375.

W S C N E

***Eulophia* R. Br. ex Lindl. (s. Afr.:**

42 spp.)

1648000

Stewart *et al.* 1982. Wild orchids of southern Africa: 229–251.***aculeata* (L.f.) Spreng. subsp. *aculeata***

Terrestrial herb, up to 0,65 m high. Raceme rather dense and short. Flowers small, odd sepal 5–9 mm long, column foot up to 2 mm long. Spur absent. Sepals subobtusate to subacute. *Flowers with sepals, petals and lip dull ivory to white or greenish white, lip sometimes tinged pale purple; December to January.* Sour grassland. Codd 8228.

W S C N E

***aculeata* (L.f.) Spreng. subsp. *huttonii* (Rolfe) A.V. Hall**

Terrestrial herb, up to 0,65 m high. Raceme rather dense and short. Flowers medium-sized, odd sepal 9–18 mm long, column foot 2–5 mm long. Spur absent. *Flowers with sepals, petals and lip greenish white to pink, tinged with green to dark reddish purple. Lip crests usually yellowish green to white; September to December.* Sour and tall grassland. Drews 78.

W S C N E

***adenoglossa* (Lindl.) Rchb. f.**

(= *E. nigricans* Schltr.)

Terrestrial herb, up to 0,9 m high. Cylindrical portion of spur shorter than mentum. Column 9–12 mm long, rather slender, with anther cap shortly beaked. *Flowers olive-green to yellowish green, lip pale purple; December.* Grassland. Codd 5905.

W S C N E

***angolensis* (Rchb. f.) Summerh.**

(= *Lissochilus buechananii* Rchb. f.)

Terrestrial herb, up to 1,4 m high. Sepals obtuse, slightly longer than suboblong petals. Conical spur weakly developed. Lip crests of 3–5 blades. *Flowers bright lemon-yellow; December to February.* Swampy open grassland. Kluge 1636.

W S C N E

***chlorantha* Schltr.**

Terrestrial herb, up to 350 mm tall. Raceme somewhat lax and elongate. Sepals acute. Mentum passing into a distinct spur 1–2 mm long. *Flowers green; October.* Exposed to sheltered grassy slopes or in bushveld on sometimes stony soils. Galpin 652.

W S C N E

clavicornis Lindl. var. **clavicornis**

(= *E. hians* sensu Rolfe, non (L.f.) Spreng.,
= *E. violacea* Rchb. f.)

Terrestrial herb, up to 0,92 m tall. Side lobe veins gradually curving away from central axis of lip. Mentum absent or vestigial. Lip lamina ± as long as odd sepal. *Flowers with sepals green to purplish brown, petals and lip white to purple or yellow; August to December.* Grassland. Devenish 59.

W	S	C	N	E
---	---	---	---	---

clavicornis Lindl. var. **inaequalis** (Schltr.) A. V. Hall

(= *E. watkinsonii* Rolfe)

Terrestrial herb, up to 0,92 m high. Side lobe nerves not curving away from central axis of lip. Mentum 1–2 mm long. Lip lamina often rather shorter than odd sepal. *Flowers with sepals green to dark purplish brown, petals and lip bright yellow; August to October.* Grassland. Venter 2082.

W	S	C	N	E
---	---	---	---	---

clavicornis Lindl. var. **nutans** (Sond.) A. V. Hall

(= *E. flanaganii* Bolus,
= *E. galpinii* Schltr.)

Terrestrial herb, up to 0,92 m high. Leaves fully developed at time of flowering, 100–730 mm long. Spur 1,4–5,2 mm long. Midlobe crests of numerous papillae, often united at base. *Flowers with sepals green to dark purplish brown, petals and lip white to pale or deep purple or tinged with blue or yellow; December to February.* Grassland. Germishuizen 2890.

W	S	C	N	E
---	---	---	---	---

clitellifera (Rchb. f.) Bolus

Terrestrial herb, up to 350 mm tall. Column 2–4 mm long. Odd sepal 4–9 mm long. Spur slightly conical, 2,5–4,0 mm long. Margin of midlobe of lip undulate. *Flowers with petals and lip dull white with reddish purple lines on inner surfaces; September to December.* Scrub, thornveld, bushveld and grassland. Hafström & Acocks 341.

W	S	C	N	E
---	---	---	---	---

coddii A. V. Hall

Terrestrial herb, up to 400 mm tall. Leaves 5 mm wide. Odd sepal 12–15 mm long. Midlobe of lip irregularly denticulate. Crests consisting of low ridges on all main veins of lip, extending to near midlobe apex. *Flowers with brown sepals, cream petals and lip; December.* In steep places among grass or bush on sandstone-derived soils. Codd 4811.

W	S	C	N	E
---	---	---	---	---

cooperi Rchb. f.

(= *E. fragrans* Schltr.,
= *E. sankeyi* Rolfe)

Terrestrial herb, up to 370 mm tall. Leaves less than half the length of scape at anthesis. Spur 1–2 mm long. Crest papillae few, confined to basal third of midlobe of lip. *Flowers with petals and lip straw yellow with lip tinged purple and crest bright yellow; October to December.* Grassland. Venter 2086.

W	S	C	N	E
---	---	---	---	---

ensata Lindl.

Terrestrial herb, up to 1 m high. Spur slender, 4–7 mm long. Midlobe half the length of lip, excluding spur. Apices of side lobes of lip obtuse. *Flowers bright to pale yellow; December to January.* In open grassland, grassy places in bushveld and *Eucalyptus* plantations. Hemm 414.

W	S	C	N	E
---	---	---	---	---

foliosa (Lindl.) Bolus

Terrestrial herb, up to 450 mm tall. Raceme generally dense and elongate. Papillae wart-like and very sparse on distal half of midlobe of lip. *Flowers dull lime-green, ends of lip lobes tinged with dark purple or pale purple to white; November to February.* Sour grassveld. Devenish 960.

W	S	C	N	E
---	---	---	---	---

friderici (Rchb. f.) A. V. Hall

Terrestrial herb, up to 0,6 m high. Lip with a fringed lamella 2–4 mm high, lying transversely near base; midlobe of lip tapering and curved up to be close to end of 5 mm-long column. *Flowers with petals and lip bright lemon-yellow with brownish red lines along veins inside; November to December.* Woodland and forest areas, in leaf-mould in shade. Macneil sub PRE 29057.

W	S	C	N	E
---	---	---	---	---

hereroensis Schltr.

Terrestrial herb, up to 0,55 m high. Petals a little shorter but broader than sepals. Midlobe of lip subdeltoid. Crest lamellae on main side lobe nerves. *Flowers yellowish green, crest blades on lip pale lemon-yellow; September to December.* Dry bushveld areas. Hardy 1621.

W	S	C	N	E
---	---	---	---	---

horsfallii (Bateman) Summerh.

Terrestrial herb, up to 2 m high. Sepals acute to apiculate, slightly shorter than subrotund petals. Midlobe with wavy margins, purple, with 3 mm-tall blades of crests white. *Flowers with sepals green, tinged with brownish purple, petals pale purple to white; August to April.* Swampy places. Venter 8541.

W	S	C	N	E
---	---	---	---	---

leachii Greatrex ex A. V. Hall

Terrestrial herb, up to 0,6 m high. Rostellum with a fine papilla 1 mm long on either side. Margins of midlobe of lip crispate-dentate. *Flowers yellowish green; December to January.* Bushveld on stony, black and heavy soils. Vorster 2173.

W	S	C	N	E
---	---	---	---	---

leontoglossa Rchb. f.

(= *E. stenantha* Schltr.)

Terrestrial herb, up to 300 mm tall. Midlobe one-third of the length of lip, excluding spur. Apices of side lobes of lip acute. Spur rather slender, 3–5 mm long. *Flowers with sepals white to lemon-yellow or pink tinged with green, petals and lip white to pale yellow or pink;*

October to January. Grassland on dry to marshy soils. Joffe 194.

W S C N E

livingstoniana (Rchb. f.) Schltr.

Terrestrial herb, up to 0,6 m high. Midlobe long and narrow, crests of low warty cushions. Spike 40–150 mm long. Sepals and petals spreading fully to partly backwards. *Flowers white and purple; October to January.* Woodland. Krynauw 1391 (Nat. Cons.).

W S C N E

longisepala Rendle

Terrestrial herb, up to 0,6 m high. Sepals linear, $\pm$ twice as long as petals. Side lobes of lip pale yellowish green, midlobe white with lamellae and papillae forming crests pale green. *Flowers green to yellowish green, tinged with dark purple; December.* Bushveld. Cruikshank sub PRE 60489.

W S C N E

milnei Rchb. f.

Terrestrial herb, up to 0,52 m high. Odd sepal 3–8 mm long. Mentum absent. Spur apex nearly always lying against ovary. *Flowers with sepals and petals dull to bright yellow, lip pale yellow, midlobe bearing deeper yellow slender crest papillae; November to February.* In swampy soils, sometimes in free-standing water. Galpin 1221.

W S C N E

odontoglossa Rchb. f.

Terrestrial herb, up to 0,9 m high. Midlobe usually slightly more than half the length of lip, with denticulate margins. Spur barely evident. *Flowers with sepals and petals pale yellow, lip orange-yellow with dense masses of sometimes reddish brown papillae on midlobe; January.* Sour grassland in well-drained to marshy places. Reynolds 4134.

W S C N E

ovalis Lindl. subsp. **ovalis**

(= *E. bakeri* Rolfe)

Terrestrial herb, up to 0,65 m high. Spur 2,5–5,6 mm long, conical to cylindrical. Odd sepal 14–26 mm long. Midlobe of lip 5–15 mm long. *Flowers with petals white, slightly tinged with yellow-purple at base outside, blue-speckled along veins inside; December.* Grassland. Codd 3516.

W S C N E

ovalis Lindl. subsp. **bainesii** (Rolfe) A.V. Hall

(= *E. complanata* I. Verd.)

Terrestrial herb, up to 0,65 m high. Spur 1,0–2,9 mm long, stout and rather flattened. Odd sepal 18–36 mm long. Midlobe of lip 9–18 mm long. *Flowers with petals pale straw-yellow, brownish purple at base outside, a few dark speckles inside with main veins lemon-yellow; October to March.* Open grassland and grassy places in bush or thornveld. Acocks 18730.

W S C N E

parviflora (Lindl.) A.V. Hall

Terrestrial herb, up to 500 mm tall. Petals often shortly clawed, obovate-elliptic. Column 4–8 mm long. Side lobes of lip obliquely truncate. *Flowers with sepals dull brownish green outside, rich orange-brown inside, petals pale yellow, lip yellow; August to October.* Sour grassland. Galpin 546.

W S C N E

parvilabris Lindl.

(= *E. latipetala* Rolfe,
= *E. rehmannii* Rolfe)

Terrestrial herb, up to 0,85 m high. Flower scarcely resupinate at anthesis. Crests confined to basal two-fifths of lip, of low ridges, lacking papillae. *Flowers with petals and lip mostly pale straw-yellow, but basal third of lip dark maroon; December to February.* Open grassland on moist steep slopes and flats. Kluge 960.

W S C N E

petersii Rchb. f.

(= *E. caffra* Rchb. f.,
= *E. circinnata* Rolfe)

Terrestrial herb, up to 200 mm tall. Leaves with serrulate margins. Petals acuminate, narrowly oblong with apices often circinnate. *Flowers green, marked with purplish brown, midlobe of lip white with crests purplish red to pink; November to December.* Valley bushveld and thorn savanna. Van Wyk 4875.

W S C N E

schweinfurthii Kraenzl.

Terrestrial herb, up to 0,8 m high. Subcylindrical part of spur shorter than 1 mm. Midlobe of lip incurved so that central convexity lies close to column. *Flowers with petals and lip yellow with reddish brown markings on inner surfaces; November.* In areas with lowveld bush or inland mountain grassland on subtropical sandy soils. Van der Schijff 3384.

W S C N E

speciosa (R. Br. ex Lindl.) Bolus

(= *Lissochilus speciosus* Lindl.)

Terrestrial herb, up to 0,9 m high. Subcylindrical part of spur shorter than 1 mm. Midlobe of lip scarcely incurved, so that central convexity lies distant from column. *Flowers with pale green sepals, petals and lip yellow; November to March.* Bushveld, thorny bush of the lowveld and mountain grassland. Van Dam sub TRV 21229.

W S C N E

streptopetala Lindl.

(= *E. krebsii* (Rchb. f.) Bolus,
= *E. paivaana* (Rchb. f.) Summerh.)

Terrestrial herb, up to 2,3 m high. Leaves with a transverse line near base marking an abscission layer. Margin of side lobe of lip adjoining midlobe 5–9 mm long. *Flowers with sepals green, mottled dark purplish brown, petals bright lemon-yellow, side lobes of lip dull purple, midlobe yellow; October to January.* Thorn-

veld, margins of forests and plantations and in bush-clumps. *Onderstall* 888.

W S C N E

tenella *Rchb. f.*

(= *E. flaccida* Schltr.,
= *E. natalensis* Rchb. f.)

Terrestrial herb, up to 0,6 m high. Spike dense. Side lobes of lip subrhomboid, overlapping part of base of midlobe, with only apex slightly divergent. *Flowers with sepals dark green to brownish purple, petals dull straw-yellow outside, pale purplish brown inside; November to January.* Grassland. *Krynauw* 2.

W S C N E

tuberculata *Bolus*

Terrestrial herb, up to 400 mm tall. Spur lacking or present as a small boss on mentum. Odd sepal shorter than 9 mm. Lip with 2 mounds on base of side lobes, forming a narrow passage to a minute sac-like spur. *Flowers with petals and lip dull white, tinged maroon; crest lamellae yellow; June to October.* Grassland and savanna. *Van Wyk* 2408.

W S C N E

welwitschii (*Rchb. f.*) *Rolfé*

Terrestrial herb, up to 0,9 m high. Distal half of midlobe of lip with very few papillae. Midlobe 9–20 mm long. Spur slender, 3–7 mm long. *Flowers straw-yellow with green tinges, lip dark reddish purple; September to January.* Grassland, in dry to marshy places. *Buhrmann* 2.

W S C N E

zeyheriana *Sond.*

Terrestrial herb, up to 350 mm tall. Side lobes of lip subelliptic, not overlapping midlobe margins, widely divergent from median axis of lip. *Flowers pale blue, tinged with purple; January.* Grassland. *De Villiers* 23.

W S C N E

Habenaria *Willd.* (s. Afr.: 35 spp.) 1422000

Stewart et al. 1982. Wild orchids of southern Africa: 82–96.
Manning. 1989. S. Afr. J. Bot. 55: 192–195.

arenaria *Lindl.*

(= *H. micrantha* (Lindl.) Rchb. f.)

Terrestrial herb, up to 400 mm tall. Leaves 2 or 3, at base of stem, indistinctly mottled. Inflorescence lax, flowers numerous. Petals undivided; lip with 3 equal lobes. *Flowers green; May to July.* Seasonally dry habitats and in shade. *Galpin* 955.

W S C N E

barbertonii *Kraenzl. & Schltr.*

Terrestrial herb, up to 400 mm tall. Posterior petal lobe triangular oblique, subobtusate, 8–10 mm long, $\pm$ 3 mm broad at base. Spur 29–32 mm long. *Flowers green and*

white; February to March. Grassland, rocky hillsides. *Venter* 3006.

W S C N E

bicolor *Conrath & Kraenzl.*

Terrestrial herb, up to 400 mm tall. Leaves linear, attenuate, spreading, up to 100 mm long. Spur (4–)6–7 mm long. Lip lobes subequal. *Flowers green; January to March.* Drained grassland. *Codd* 2692.

W S C N E

chlorotica *Rchb. f.*

(= *H. natalensis* Rchb. f.,
= *H. wilmsiana* Kraenzl.)

Terrestrial herb, up to 500 mm tall. Leaves linear to narrowly oblong. Spur 20–30 mm long. Petals lanceolate, falcate; lip with 3 long narrow lobes. *Flowers green; January to April.* Seasonally marshy grassland. *Venter* 4222.

W S C N E

clavata (*Lindl.*) *Rchb. f.*

Terrestrial herb, up to 0,7 m high. Spur 30–50 mm long, inflated towards apex. Anterior petal lobe linear, curved, twice as long as posterior lobe. *Flowers green with white stigmas; January to February.* Well-drained grassland. *Wager sub TRV* 23019.

W S C N E

cornuta *Lindl.*

(= *H. ceratopetala* A. Rich.,
= *H. subcornuta* Schltr.)

Terrestrial herb, up to 500 mm tall. Anterior petal lobe curling upwards, both petal lobes hairless. Spur 14–17 mm long, twisted once and inflated towards apex. *Flowers pale green; February to March.* Marshy grassland. *Raal* 1497.

W S C N E

culveri *Schltr.*

Terrestrial herb, up to 400 mm tall. Lateral lobes of lip much shorter than midlobe. Anterior lobe of petal filiform, half the length of posterior lobe. *Flowers green; February to March.* Deep shade in subtropical forest. No specimens in PRE.

W S C N E

dives *Rchb. f.*

Terrestrial herb, up to 0,6 m high. Spur 8–15 mm long. Anterior lobe of petal broadly lanceolate, shorter than oblong posterior lobe. Lateral sepals with a lateral apiculus. *Flowers white with green-veined sepals; December to March.* Well-drained grassland. *Cameron* 102.

W S C N E

dregeana *Lindl.*

Terrestrial herb, up to 330 mm tall. Lateral lobes of lip distinctly shorter than midlobe. Anterior petal lobe shorter than posterior. Mouth of spur widened. *Flowers*

green; February to April. Short grassland on rocky hillsides. *Germishuizen 5165.*

W S C N E

epipactidea *Rchb. f.*

(= *H. foliosa* (Sw.) Rchb. f.,
= *H. polyphylla* Kraenzl.)

Robust terrestrial herb, up to 400 mm tall. Dorsal sepal 9–12 mm long. Petals broadly ovate-oblong, rounded to subacute. Spur ± 30 mm long. *Flowering January to March.* Marshy grassland. *Codd 3676.*

W S C N E

falcicornis (*Burch. ex Lindl.*) *Bolus* subsp. **caffra**

(*Schltr.*) *J.C. Manning*

(= *H. caffra* Schltr.,
= *H. tetrapetala* Kraenzl.,
= *H. falcicornis* (*Burch. ex Lindl.*) *Bolus* var. *caffra* (*Schltr.*) *Renz & Schelpe*)

Terrestrial herb, up to 0,7 m high. Spur 20–40 mm long. Anterior petal lobe lanceolate to oblong-lanceolate, ± as long as posterior lobe. *Flowers with green sepals and white petals and lip; February to March.* Grassland. *Germishuizen 5189.*

W S C N E

galpinii *Bolus*

Terrestrial herb, up to 400 mm tall. Posterior petal lobe as broad as anterior lobe. Midlobe of lip much longer than side lobes. Spur 13–20 mm long, distinctly curved. *Flowers green and white; January to June.* Grassland, along streams or on stony hillsides. *Venter 4220.*

W S C N E

humilior *Rchb. f.*

(= *H. rehmannii* *Bolus*)

Terrestrial herb, up to 400 mm tall. Leaves linear, 110 × 10 mm. Dorsal sepal ± 5 mm long. Posterior petal lobe with a short tooth on inner margin, ± as long as anterior lobe. Spur ± 14 mm long. *Flowers green.* Grassland. No specimens in PRE.

W S C N E

kraenzliniana *Schltr.*

Terrestrial herb, up to 300 mm tall. Posterior petal lobe oblong-lanceolate, obliquely acuminate. Spur 30–40 mm long. Lip with midlobe linear, ± 5 mm long, side lobes filiform, 30–33 mm long. *Flowers yellowish green; February to April.* Stony, grassy hillsides. *Venter 3009.*

W S C N E

laevigata *Lindl.*

(= *H. ornithopoda* Rchb. f.)

Terrestrial herb, up to 400 mm tall. Leaves narrowly elliptic, acute, appressed to stem, up to 70 mm long. Spur 16–20(–30) mm long. Lateral lobes of lip half the length of midlobe. *Flowering December to February.* Well-drained grassland. *Devenish 607.*

W S C N E

lithophila *Schltr.*

(= *H. macowaniana* Kraenzl.,
= *H. petri* Schltr.)

Terrestrial herb, up to 250 mm tall. Lobes of lip and petal lobes subequal. Mouth of spur not widened. *Flowers green; January to March.* Short grassland. *Galpin 14445.*

W S C N E

malacophylla *Rchb. f.*

Terrestrial herb, up to 0,7 m tall. Lip 3-lobed, 6–7 mm long. lobes subequal. Anterior lobe of petal longer and narrower than posterior lobe. Spur 12–15 mm long. *Flowers green and white; February to March.* Along forest margins and on forest floor. *Kluge 911.*

W S C N E

mossii (*G. Will.*) *J.C. Manning*

(= *H. lithophila* Schltr. subsp. *mossii* *G. Will.*)

Terrestrial herb, up to 240 mm tall. Spur up to 24 mm long. Anterior petal lobe and side lobes of lip ± terete. Middle lobe of lip ligulate with ciliolate margins. *Flowers green; April.* Open grassland on dolomite or in black, sandy soil. *Coetzee 814.*

W S C N E

nyikana *Rchb. f.*

(= *H. elatior* Schltr.)

Terrestrial herb, up to 500 mm tall. Dorsal sepal 7–8 mm long. Posterior petal lobe without a tooth, anterior petal lobe up to twice the length of posterior lobe. *Flowers green with a pale centre; February to April.* Grassland. *Venter 4240.*

W S C N E

petitiana (*A. Rich.*) *Dur. & Schinz*

(= *H. microrhynchos* Schltr.,
= *Peristylus natalensis* *Rolfe*)

Terrestrial herb, up to 350 mm tall. Leaves ovate-lanceolate, 50 × 25 mm. Lip with 3 short lobes. Sepals, petals and lip ± 2,5 mm long. Spur ± 1 mm long. *Flowers green.* Forest margins, in shade. No specimens in PRE.

W S C N E

pseudociliosa *Schelpe ex J.C. Manning*

Terrestrial herb, up to 470 mm tall. Bracts and sepals hispid. Spur 1,5 times longer than ovary. Lateral lobes of lip shorter than midlobe. Rostellor arms lobed adaxially near base. *Flowers green; February to April.* Damp grassland. *Bredenkamp 799.*

W S C N E

rautaneniana *Kraenzl.*

(= *H. trachychila* Kraenzl.)

Terrestrial herb, up to 400 mm tall. Lip lobes shortly but distinctly hairy towards base. Leaves linear, up to 180 × 7 mm. Spur ± 14 mm long, swollen in upper half. *Flowers green or yellowish green.* Marshy grassland. No specimens in PRE.

W S C N E

schimperiana Hochst. ex A. Rich.

Terrestrial herb, up to 0,7 m high. Inflorescence lax, flowers numerous. Anterior petal lobe spreading downwards, both petal lobes ciliate. Spur 11–22 mm long. *Flowers green; January to February.* Marshes. *Galpin 1218.*

W	S	C	N	E
---	---	---	---	---

stenorhynchos Schltr.

Terrestrial herb, up to 250 mm tall. Inflorescence laxly 1–4(–6)-flowered. Lateral sepals with an oblique apiculus. Petal lobes slender. Lip 3-lobed. Spur $\pm$ 9 mm long. *Flowers white with sepals greenish on reverse; February.* Marshy grassland. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

transvaalensis Schltr.

Terrestrial herb, up to 0,55 m high. Posterior petal lobe linear, acute, 10–12 mm long, 1 mm broad at base. Spur 20–23 mm long. *Flowers green and white; February to March.* Grassland. *Rodin 4028.*

W	S	C	N	E
---	---	---	---	---

tridens Lindl.

(= *H. gerrardii* Rchb. f.)

Terrestrial herb, up to 400 mm tall. Posterior petal lobe broader than anterior lobe. Midlobe of lip not or only slightly exceeding side lobes. Spur 10–12 mm long. *Flowers green; January to April.* Along stream and riverbanks. *Vorster 2795.*

W	S	C	N	E
---	---	---	---	---

trilobulata Schltr.

Terrestrial herb, up to 200 mm tall. Inflorescence lax, flowers few. Spur 20–30 mm long. Posterior petal lobe ovate-oblong, rounded. Lip 3-lobed, $\pm$ 23 mm long, with side lobes shorter than midlobe. *Flowers pale green; February.* Streambanks. *Strey 3567.*

W	S	C	N	E
---	---	---	---	---

tysonii Bolus

Terrestrial herb, up to 300 mm tall. Inflorescence lax to fairly dense. Spur 12–14 mm long. Anterior petal lobe 2–4 times as long as posterior lobe. *Flowers numerous; green; January.* Rocky hillsides. *De Villiers 21.*

W	S	C	N	E
---	---	---	---	---

Herschelianthe Rauschert (s. Afr.:

14 spp.)

1435010

Stewart. 1982. Wild orchids of southern Africa: 148.
Rauschert. 1983. Feddes Reprint 94: 433–435.

baurii (Bolus) Rauschert

(= *Herschelia baurii* (Bolus) Kraenzl.)

Terrestrial herb, up to 400 mm tall. Dorsal sepal galeate with a cylindrical, obtuse, horizontal spur, 4–6 mm long. Petals with apex narrowly obtriangulate or obscurely bilobed. Lip deeply dissected, beard-like.

Flowers sky-blue to purple-blue; August to November. Montane grassland. *Codd 523.*

W	S	C	N	E
---	---	---	---	---

Holothrix L.C. Rich. ex Hook. (s. Afr.:

22 spp.)

1408000

Stewart et al. 1982. Wild orchids of southern Africa: 58–66.

culveri (Schltr.) Bolus

(= *H. culveri* (Schltr.) Bolus var. *integra* Bolus)

Terrestrial herb. Scape with a few short hairs at base, with bracts, slender, 140 mm. Petals delicate, undivided. *Flowers white.* Rocky slopes. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

micrantha Schltr.

Terrestrial herb, up to 150 mm tall. Leaves thinly hairy. Inflorescence fairly lax to dense, flowers numerous. Lip deeply 5-lobed, with side lobes linear, half the length of lip. *Flowering October.* Grassy cliffs. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

orthoceras (Harv.) Rchb. f.

Terrestrial herb, up to 300 mm tall. Leaves dark green with a silvery network, not withered at flowering time. Outermost lobe of lip on either side longer than central lobes. *Flowers with green sepals, white petals and purple-veined white lips; March to June.* In humus on mossy rocks in forest. *Nel 216.*

W	S	C	N	E
---	---	---	---	---

randii Rendle

(= *H. reckii* Bolus)

Terrestrial herb, up to 310 mm tall. Leaves up to 40 mm broad, hairless, withered at flowering time. Lip lobes filamentous. *Flowers with white petals and lip; September to January.* On rocky ledges in grassland. *Hardy 6841.*

W	S	C	N	E
---	---	---	---	---

scopularia (Lindl.) Rchb. f.

(= *H. multisecta* Bolus,

= *Scopularia secunda* Lindl.)

Terrestrial herb, up to 340 mm tall. Leaves moderately to densely pilose, flat on ground. Spur 0,25–1,00 times the length of lip. Lip divided into 5–12 carnoselobes. *Flowers cream or pinkish cream, sometimes wine-coloured; September to November.* Grassy slopes and rocky outcrops. *Deall 2429.*

W	S	C	N	E
---	---	---	---	---

Jumellea Schltr. (s. Afr.: 1 sp.)

1828140

Stewart et al. 1982. Wild orchids of southern Africa: 260.

filicornoides (De Wild.) Schltr.

Epiphyte, up to 400 mm tall. Leaves strap-shaped, tough and leathery, arranged in 2 rows near apical part.

Inflorescences usually several, single-flowered. *Flowers white; February*. Large trees and rocks in woody or forested parts. *Murray sub PRE 36335*.

W S C N E

Liparis *L.C. Rich.* (s. Afr.: 4 spp.) 1556000

Stewart *et al.* 1982. Wild orchids of southern Africa: 216–218.

barkeri *Harv.*

(= *L. gerrardii* Rchb. f.,
= *L. neglecta* Schltr.)

Epiphyte or terrestrial herb, up to 70 mm tall. Pseudobulbs immediately adjacent to each other. Leaves 30–100 × 20–60 mm. Inflorescence terminal, bearing 4–12 flowers. Lip 6–8 mm broad. *Flowers green or yellowish green; December to February*. Forest. *Codd 9414*.

W S C N E

Monadenia *Lindl.* (s. Afr.: 16 spp.) 1436000

Stewart *et al.* 1982. Wild orchids of southern Africa: 148–154.

brevicornis *Lindl.*

Erect terrestrial herb, up to 500 mm tall. Dorsal sepal maroon, 7–10 mm tall. Spur clavate, acute, 7–11 mm long. Lateral sepals reflexed. Lip narrowly oblong. *Flowers green; November to February*. Grassland. No specimens in PRE.

W S C N E

Mystacidium *Lindl.* (s. Afr.: 7 spp.) 1837000

Stewart *et al.* 1982. Wild orchids of southern Africa: 267–271.

braybonae *Summerh.*

Almost stemless epiphyte. Spur wide at mouth behind lip, not inflated at tip. Perianth parts pointed. *Flowers up to 20 mm in diameter; white; November to December*. Forest. *Van Wyk 5901*.

W S C N E

capense (*L.f.*) *Schltr.*

(= *Angraecum capense* (L.f.) Lindl.)

Epiphyte. Leaves 60–130 mm long. Inflorescences several, bearing 6–12 widely spaced flowers in 2 rows. *Flowers ± 20 mm in diameter. Flowers white; November to December*. Acacia savanna and bush. *Keet 1394*.

W S C N E

flanaganii (*Bolus*) *Bolus*

(= *Angraecum flanaganii* Bolus)

Almost stemless, dwarf epiphyte. Flowers up to 10 mm in diameter. Sepals pointed. Rostellum smooth. Spur slender, 20–30 mm long. *Flowers pale green; November to June*. Cool, moist forests. *Vorster & Coetzer 2051*.

W S C N E

gracile (*Rchb. f.*) *Harv.*

Short-stemmed epiphyte, normally leafless, with a mass of thin wiry roots that are unbranched and ± 1 mm thick. Flowers up to 14 mm in diameter. *Flowers pale green or straw-coloured; August to October*. Cooler forests, on trunks and branches of older trees. *Kluge 1347*.

W S C N E

venosum *Harv. ex Rolfe*

Almost stemless epiphyte, with numerous thick greyish roots with conspicuous white streaks. Leaves 20–60 mm long. Flowers 15–20 mm in diameter. *Flowers white; April to June*. On a wide variety of host trees in forest and bush. *Kluge 1325*.

W S C N E

Neobolusia *Schltr.* (s. Afr.: 2 spp.) 1429000

Stewart *et al.* 1982. Wild orchids of southern Africa: 71–72.

tysonii (*Bolus*) *Schltr.*

(= *Brachycorythis tysonii* Bolus)

Slender herb, up to 460 mm tall. Inflorescence lax, flowers 2–12. Sepals brownish green. Lip widest near apex, 8–12 × 4–8 mm. *Flowers brownish green with a white lip; December to February*. Moist or marshy grassland. *Devenish 809*.

W S C N E

Nervilia *Comm. ex Gaud.* (s. Afr.: 5 spp.) 1468000

Stewart *et al.* 1982. Wild orchids of southern Africa: 213–215.
Pettersson. 1990. Nord. J. Bot. 9,5: 487–497.

bicarinata (*Blume*) *Schltr.*

(= *N. umbrosa* (Rchb. f.) Schltr.)

Terrestrial herb. Leaf kidney-shaped, held above surface on a petiole up to 200 mm long, 100–150 × 120–170 mm. Inflorescence stout, 2–12-flowered. *Flowers greenish yellow with dark red venation; November*. Forest floors. PRE specimens on loan.

W S C N E

gassneri *B. Pettersson*

Erect terrestrial herb up to 80 mm tall, glabrous. Leaf solitary, appearing after flowering; blade cordate, subacute to obtuse. Scape erect, terete, 1-flowered, lengthening to 6–20 mm when fruiting. *Flowers small, 22 × 18 mm, white to faint pink with cerise*. In plantations of exotic trees. No specimens in PRE.

W S C N E

kotschyi (*Rchb. f.*) *Schltr.* var. **purpurata** (*Rchb. f. & Sond.*) *B. Pettersson*

(= *N. purpurata* (Rchb. f.) Schltr.)

Terrestrial herb. Leaf elliptic, ovate with a short petiole, plicate, up to 100 mm long, appearing after flowers. Inflorescence slender, 2–5-flowered. *Flowers pale greenish yellow with brownish veins; November*. Grassland. PRE specimens on loan.

W S C N E

Oberonia Lindl. (s. Afr.: 1 sp.) 1558000Stewart *et al.* 1982. Wild orchids of southern Africa: 215–216.**disticha** (Lam.) Schltr.

Epiphyte, with leafy stems up to 100 mm long, flattened. Leaves pale yellowish green, succulent, each up to 35 mm long, 9 mm wide. Inflorescence up to 70 mm long, bearing 70–100 flowers. *Flowers 2 mm in diameter, lip bilobed and fimbriate at apex; straw-colored; February to March.* Forest. Scheepers 899.

W S C N E

Polystachya Hook. (s. Afr.: 10 spp.) 1565000Stewart *et al.* 1982. Wild orchids of southern Africa: 222–229.**albescens** Ridley subsp. **imbricata** (Rolfe) Summerh.

Epiphyte. Leaf apex pointed. Flowers usually more than 10 per stem but opening successively, 1 at a time on each of many branches. *Flowers yellowish green with faint red markings on lip; November to January.* Forests and in rock crevices. Buitendag 1263.

W S C N E

concreta (Jacq.) Garay & Sweet

Epiphyte, up to 450 mm tall. Petals up to 3 mm long and 1 mm wide. Lip 3-lobed, with a mealy surface in centre of midlobe. *Flowers small, 2–6 mm from tip of mentum to apex of lip, yellowish green or dull pink; December to February.* Bushveld. Van der Merwe 2347.

W S C N E

cultriformis (Thouars) Spreng.(= *P. gerrardii* Harv.)

Epiphyte. Pseudobulbs or stems bearing 1 leaf. Leaf elliptic, 140–200 × 20–30 mm. Lip 3-lobed with a cushion-like outgrowth in centre of midlobe. *Flowers yellowish green, white or pink; December to January.* Forests. Mogg 17335.

W S C N E

fusiformis (Thouars) Lindl.

Epiphyte. Pseudobulbs or stems narrowly cylindrical, each one arising halfway along length of preceding one to form an elongated, frequently branching plant. *Flowers yellowish green or reddish; January.* Forest. Schweickerdt sub PRE 58868.

W S C N E

ottoniana Rchb. f.(= *P. glaberrima* Schltr.)

Epiphyte. Flowers 1–5 per inflorescence. Lip with a yellow stripe down midlobe. Midlobe sharply recurved. *Flowers white or pale green; July to December.* Common on rocks and trees in forested localities. Scheepers 724.

W S C N E

pubescens Rchb. f.

Epiphyte. Flowers opening fully. Lateral sepals with longitudinal brownish stripes. Petals spoon-shaped.

Side lobes of lip bearing silky white hairs. *Flowers golden yellow; November to December.* Fairly common on sandstone outcrops and on trees in lightly shaded situations. Stalmans 742.

W S C N E

transvaalensis Schltr.(= *P. natalensis* Rolfe)

Epiphyte, up to 250 mm tall. Leaf apex rounded, leaves fleshy. Flowers 1–8 per stem which has few or no branches. Lip white with faint purple streaks on side lobes. *Flowers yellowish green, often suffused with reddish brown on outer surface; October to January.* Forest. Herman 375.

W S C N E

zambesiaca Rolfe

Epiphyte. Lip white, including central area, but with violet streaks on inner surface of side lobes. Outer surface of sepals densely but minutely hairy. *Flowers yellowish green, suffused with brown; October to January.* Forest. Scheepers 703.

W S C N E

Pterygodium Sw. (s. Afr.: 13 spp.) 1438000Stewart *et al.* 1982. Wild orchids of southern Africa: 183–190.**hastatum** Bolus

Slender herb, up to 350 mm tall. Inflorescence lax, flowers 2 to numerous. Lip apex erose. Lip appendage 3-pointed, bright green within. *Flowers green and white with small purple dots at apices of petals; February to April.* Grassland. Kluge 1706.

W S C N E

magnum Rchb. f.(= *Corycium magnum* (Rchb. f.) Rolfe)

Very robust terrestrial herb, up to 1.5 m high. Inflorescence dense, flowers numerous. Petals with denticulate margins. *Flowers with sepals green, petals yellowish with numerous red dots or reddish with darker veins; January to March.* In marshy grassland and river flood plains. Germishuizen 5200.

W S C N E

Satyrrium Sw. (s. Afr.: 33 spp.) 1430000Stewart *et al.* 1982. Wild orchids of southern Africa: 160–179.**bracteatum** (L.f.) Thunb.(= *S. cordifolium* Lindl.,
= *S. saxicolum* Bolus)

Terrestrial herb, up to 300 mm tall. Leaves spreading. Flower bracts mostly flattened. Petals and odd sepal dark reddish brown. Lip curved around sides of column. *Flowers dull white with dark reddish brown veins; September to November.* Dry sandy flats, marshes, peaty ledges and fissures among rocks. Devenish 1816.

W S C N E

cristatum Sond. var. **cristatum**

Terrestrial herb, up to 0,55 m high. Sepals and petals fused with lip for $\pm$ half their length and usually forming a shallow sac beneath column. Lip entrance 3–6 mm high. Spurs often shorter than ovary, 3–7 mm long. *Flowers white with purple to brownish red lines and blotches; January to March.* On moist grassy flats sometimes marshy. *Onderstall 1022.*

W	S	C	N	E
---	---	---	---	---

cristatum Sond. var. **longilabiatum** A.V. Hall

Terrestrial herb, up to 0,55 m high. Sepals and petals fused with lip for $\pm$ one-fifth to one-third of their length and not forming a shallow sac beneath column. Lip entrance 5–7 mm high. Spurs usually longer than ovary, 7–12 mm long. *Flowers white with purple to brownish red lines and blotches; January to February.* Marshy grassland. *Buhrmann 22.*

W	S	C	N	E
---	---	---	---	---

hallackii Bolus subsp. **ocellatum** (Bolus) A.V. Hall
(= *S. ocellatum* Bolus)

Terrestrial herb, up to 0,6 m high. Flowers dense or more usually well-spaced. Spurs 15–31 mm long. Sepals usually 8–11 mm long. *Flowers white, pink or deep pink; December to March.* Marshes. *Linder 3205.*

W	S	C	N	E
---	---	---	---	---

longicauda Lindl. var. **longicauda**

Terrestrial herb, up to 0,8 m high. Flower bracts 6–12 mm broad. Sepals 5–11 mm long. Spurs 22–46 mm long, lying close to the 8–15 mm long ovary. *Flowers white to pink; December to February.* Open grassland. *Krynauw 1025.*

W	S	C	N	E
---	---	---	---	---

longicauda Lindl. var. **jacottetianum** (Kraenzl.) A.V. Hall

Terrestrial herb, up to 0,8 m high. Lower flower bracts 4–7 mm wide. Sepals 4–7 mm long. Spurs 13–26 mm long, lying close to the 6–12 mm long ovary. *Flowers white to pink; January to February.* Grassland, often in stony places or marshy soils. *Scheepers 833.*

W	S	C	N	E
---	---	---	---	---

neglectum Schltr. subsp. **neglectum**

Terrestrial herb, up to 0,95 m high. Aperture of labellum 3–4 mm tall. Rostellum apex deflexed, semi-orbicular. Spike $\pm$ 20 mm in diameter. *Flowers pink to dark red or orange to orange-yellow; January to March.* Occasional in open to sheltered places in upland grassland on usually moist slopes. *Kluge 2483.*

W	S	C	N	E
---	---	---	---	---

parviflorum Sw.

(= *S. wilmsianum* Kraenzl.)

Terrestrial herb, up to 1,3 m high. Free parts of petals withering to brown shortly after anthesis. Lip egg-shaped with a small aperture. Spurs 5–15 mm long,

curved away from ovary at first. *Flowers yellowish green, tinged olive to dark maroon; December to April.* Grassland, moist to dry places. *Mogg 37683.*

W	S	C	N	E
---	---	---	---	---

trinerve Lindl.

(= *S. atherstonei* Rehb. f.)

Terrestrial herb, up to 0,9 m high. Leaves narrowly lanceolate, erect. Spurs 1,5–4,5 mm long. Lip flap small, 1 mm long. *Flowers white or pale green with odd sepal and petals lemon-yellow; December to February.* Marshy black soils. *Cameron 360.*

W	S	C	N	E
---	---	---	---	---

Schizochilus Sond. (s. Afr.: 8 spp.) 1431000

Stewart *et al.* 1982. Wild orchids of southern Africa: 75–79.

cecilii Rolfe subsp. **culveri** (Schltr.) H.P. Linder

Herb, up to 250 mm tall. Spur longer than 0,6 mm. Sepals shorter than 3,5 mm. *Flowers yellow; December to January.* Montane grassland or rock ledges, often in slight seepages. *Germishuizen 2935.*

W	S	C	N	E
---	---	---	---	---

cecilii Rolfe subsp. **transvaalensis** (Rolfe) H.P. Linder

Herb, up to 400 mm tall. Leaves cauline or not more than 3 basal. Spur shorter than 0,6 mm. Lip with 3 calli. *Flowers white; December to February.* Grassland, often along margins of flat rocks. *Venter 11340.*

W	S	C	N	E
---	---	---	---	---

crenulatus H.P. Linder

Slender herb, up to 350 mm tall. Leaves narrowly lanceolate to linear, more than 4. Sepals 5–7 mm long. Lip with a ridge of filamentous crests. *Flowers white with $\pm$ mauve veins; December to February.* Around edges of flat rock flushes, usually in damp conditions in moss beds, in full sunlight. *Linder 1995.*

W	S	C	N	E
---	---	---	---	---

flexuosus Harv. ex Rolfe

(= *S. pulchellus* Schltr.)

Herb, up to 130 mm tall. Leaves 10–30 with lower 6–20 basal. Inflorescence usually subcapitate. Lip with central lobe 2 mm long, lateral lobes 1 mm long. *Flowers with white sepals and petals and a yellow lip; December to January.* Damp montane grassland or in shallow soil over bedrock. *Van der Merwe 1122.*

W	S	C	N	E
---	---	---	---	---

ilacinus Schelpe ex H.P. Linder

Slender herb, up to 300 mm tall. Leaves elliptical, 3–5. Sepals 8–14 mm long. Lip very obscurely 3-lobed. Spur deeply bifid, 1,5–3,0 mm long. *Flowers white, often with pink veins; October to December.* On rock ledges in montane grassland. *Kerfoot 8155.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond.

Slender herb, up to 500 mm tall. Leaves generally all cauline. Lip deeply 3-lobed with central lobe 2 mm long and lateral lobes 1 mm long and 3 fleshy calli. *Flowers bright yellow; December to February.* Wet grassland. *Cameron 270.*

W S C N E

Stenoglottis Lindl. (s. Afr.: 4 spp.) 1407000

Stewart et al. 1982. Wild orchids of southern Africa: 80–82.

fimbriata Lindl.

(= *S. fimbriata* Lindl. var. *saxicola* Schltr. ex Kraenzl.)

Herb, up to 300 mm tall, with 5–20 spotted leaves arranged in a basal rosette. Lip of flowers without a spur. *Flowers lilac or pink with a few darker spots; January to May.* Forests, patches of bush and epiphytically on moss-covered tree trunks. *Reid 727.*

W S C N E

zambesiaca Rolfe

Erect, lithophytic or epiphytic herb, up to 350 mm tall. Leaves lightly spotted or unspotted, ligulate-lanceolate, up to 120 mm long, margins undulate. Lip spread-

ing, wedge-shaped, without a spur at base, side-lobes with a truncate apex. *Flowers pale lilac or pink with darker spots or streaks on lip.* Usually amongst a dense growth of mosses, either on rocks or fallen trees. No specimens in PRE.

W S C N E

Tridactyle Schltr. (s. Afr.: 4 spp.) 1828010

Stewart et al. 1982. Wild orchids of southern Africa: 272–275.

bicaudata (Lindl.) Schltr. subsp. **bicaudata**

Epiphyte. Stems long and straggling. Inflorescences bearing 12–16 flowers in 2 distinct rows. Spur shorter than 15 mm. *Flowers light brown or greenish beige; February.* Forest. *Hemm 509.*

W S C N E

tricuspis (Bolus) Schltr.

Epiphyte. Stems woody, 100–200 mm long. Leaves in 2 rows. Inflorescences several to many, arising along stem, up to 150 mm long, bearing 15–30 flowers. Side lobes of lip pointed, not fringed. *Flowers greenish beige; March to May.* Branches of forest trees. *Hemm 684.*

W S C N E

POACEAE

Annual or perennial herbs, often with rhizomes and/or stolons; aerial stems, known as culms, generally terminating in an inflorescence; internodes $\pm$ circular and usually solid in cross-section. Leaves alternate, arranged in 2 ranks, stalkless; blade long and narrow, forming a sheath at base; sheath usually open with edges meeting or overlapping slightly; ligule usually present on upper surface at junction of lamina and sheath. Flowers small and inconspicuous, bisexual, unisexual or sterile; enclosed in 2 bracts and arranged with sterile bracts in spikelets which are the basic unit of the inflorescence. Perianth reduced and represented by 2 or rarely 3 microscopic scales (lodicules) at base of ovary. Stamens 3; filaments long and slender; anthers elongate. Ovary superior, 1-locular; stigmas 2, large and feathery. Fruit dry, indehiscent (a caryopsis or grain), often dispersed while still tightly enclosed in persistent bracts ('husk').

Keys and species descriptions after Gibbs Russell *et al.*, Grasses of southern Africa (1990).

Key to groups:

- 1a Plants tall, up to (2–)3 m high; culms woody and persistent, always leafy (reeds and bamboos) **Group 1** (p. 125)
- 1b Plants seldom reaching 3 m; culms herbaceous or uncommonly woody, leafy or not leafy 2
- 2a Female-fertile spikelets with proximal incomplete florets or empty lemmas **Group 2** (p. 126)
- 2b Female-fertile spikelets without proximal incomplete florets or empty lemmas 3
- 3a Inflorescence a single spike (or false spike), a single raceme or composed of spike-like main branches **Group 3** (p. 129)
- 3b Inflorescence panicle (occasionally a panicle sometimes very contracted, with branches hidden by spikelets) . . . **Group 4** (p. 132)

Key to genera in Group 1

- 1a Leaves pseudopetiolate; culms more than 10 mm in diameter 2
- 1b Leaves not pseudopetiolate; female-fertile lemmas conspicuously hairy or hairless 3
- 2a Inflorescence panicle **Bambusa**
- 2b Inflorescence a false spike, with clusters of spikelets on reduced axes (often reduced to a single terminal cluster) . . . **Oxytenanthera**
- 3a Female-fertile lemmas conspicuously hairy; ligule hairs up to 0.3 mm long, shorter than their subtending membrane **Arundo**
- 3b Female-fertile lemmas hairless; ligule hairs longer than 0.5 mm, longer than their subtending membrane **Phragmites**

Key to genera in Group 2

- 1a Plants bisexual, but monoecious, all fertile spikelets unisexual **Coix**
 1b Plants bisexual with bisexual spikelets 2
- 2a Female-fertile florets more than 1 per female-fertile spikelet **Phragmites**
 2b Female-fertile florets 1 per female-fertile spikelet 3
- 3a Spikelets with bractiform involucre 4
 3b Spikelets subtended by several scabrid bristles (vestigial branches) 6
 3c Spikelets (or at least some of them) subtended by solitary scabrid bristles (vestigial branches) 8
 3d Spikelets without bractiform involucre, not subtended by solitary scabrid bristles (vestigial branches) 10
- 4a Inflorescence leafy or spatheate, comprising a complex of 'partial inflorescences' and intervening foliar organs; female-fertile lemmas mucronate or awned **Themeda**
 4b Inflorescence not leafy, not spatheate, not comprising 'partial inflorescences' and foliar organs; female-fertile lemmas not mucronate nor awned 5
- 5a Glumes of female-fertile spikelets awned, $\pm$ equalling or longer than adjacent lemmas; proximal incomplete florets epaleate, sterile **Antherphora**
 5b Glumes of female-fertile spikelets not awned, all shorter than adjacent lemmas in intact spikelets; proximal incomplete florets paleate (but palea sometimes reduced or vestigial), male **Odontelytrum**
- 6a 'Bristles' spiny, markedly coalescent basally (but bristles slender, ciliate, coalescent only at extreme base in *Cenchrus ciliaris*) ... **Cenchrus**
 6b 'Bristles' relatively slender, not spiny 7
- 7a 'Bristles' persisting on rhachis; mature spikelet-bearing axes not disarticulating; female-fertile lemmas becoming distinctly indurate when mature, margins tucked in onto palea (*Paspalum* type); paleas indurate **Setaria**
 7b 'Bristles' deciduous with spikelets; mature spikelet-bearing axes disarticulating; female-fertile lemmas not becoming indurate, margins lying flat and exposed on palea (*Digitaria* type); paleas not indurate **Pennisetum**
- 8a Lower glume of female-fertile spikelet 2–5(6)-nerved **Setaria**
 8b Lower glume of female-fertile spikelet 7–10-nerved **Sorghastrum**
 8c Lower glume of female-fertile spikelet nerveless 9
- 9a Proximal incomplete florets of female-fertile spikelets male, paleate (but palea sometimes reduced or vestigial), lemmas less firm than female-fertile lemmas; glumes pointed; palea back rounded **Odontelytrum**
 9b Proximal incomplete florets of female-fertile spikelets sterile, epaleate, lemmas similar in texture to female-fertile lemmas; glumes not pointed; palea back 2-keeled **Pennisetum unisetum**
- 10a Female-fertile spikelets not disarticulating 11
 10b Female-fertile spikelet disarticulating above glumes 14
 10c Female-fertile spikelets falling with glumes 26
- 11a Female-fertile spikelets compressed laterally 12
 11b Female-fertile spikelets compressed dorsiventrally 13
- 12a Ligule fringed; female-fertile lemmas rounded, flat or with 2 or more keels on back; glumes very unequal; proximal incomplete florets of female-fertile spikelets male, lemmas decidedly longer than female-fertile lemmas **Tricholaena**
 12b Ligule not fringed; female-fertile lemmas with single median keel on back; glumes equal or subequal in length; proximal incomplete florets of female-fertile spikelets sterile, lemmas shorter than female-fertile lemmas **Phalaris**
- 13a Glumes equal or subequal in length in intact female-fertile spikelet; spikelets consistently in long-and-short combinations; lemmas of proximal incomplete florets similar in texture to female-fertile lemmas; spikelets of sexually distinct kinds on the same plant—e.g. female or hermaphrodite and sterile or male only; female-fertile lemmas incised **Sorghum**
 13b Glumes very unequal in intact female-fertile spikelet; spikelets not in distinct long-and-short combinations; lemmas of proximal incomplete florets less firm than female-fertile lemmas; spikelets alike in sexuality on the same plant; female-fertile lemmas entire **Panicum**
- 14a Female-fertile lemmas with a single median keel on back 15
 14b Female-fertile lemmas rounded, flat or with 2 or more keels on back 19
- 15a Plants tall, up to 3 m or higher; culms scandent; leaves clinging by retrorsely scabrid blade margins; grain longitudinally grooved **Prospyrtchloa**
 15b Plants never reaching 3 m in height; culms not scandent; leaves not as in *Prospyrtchloa* 16
- 16a Incomplete florets both distal and proximal to female-fertile florets; hilum short; lodicules fleshy **Ctenium**
 16b Incomplete florets proximal to female-fertile florets; hilum long-linear; lodicules membranous 17
- 17a Palea thinner than lemma **Ehrharta**
 17b Palea similar in texture to lemma 18
- 18a Leaf auricles present; female-fertile palea back 1-keeled; stamens 5 or 6 per floret; spikelets very unconventional and hard to interpret **Oryza**
 18b Leaf auricles absent; female-fertile palea back rounded; stamens 3 per floret; spikelets $\pm$ conventional, with readily identifiable glumes, lemmas and paleas **Phalaris**
- 19a (14) Ligule not fringed **Anthoxanthum**
 19b Ligule fringed 20
- 20a Female-fertile lemmas not mucronate or awned 21
 20b Female-fertile lemmas mucronate or awned 22

21a	Proximal lemmas of female-fertile spikelets awned, similar in texture to female-fertile lemmas; female-fertile palea apically notched	Melinus
21b	Proximal lemmas of female-fertile spikelets not awned, less firm than female-fertile lemmas; female-fertile palea entire	Tricholaena
22a	Mature female-fertile lemmas with a clear germination flap; stamens 3 per female-fertile floret	23
22b	No germination flap in female-fertile lemmas; stamens usually 2 per female-fertile floret	25
23a	Callus long; glumes equal or subequal in length in intact female-fertile spikelet; ovary apex hairy	Tristachya
23b	Callus short; glumes very unequal in intact female-fertile spikelet; ovary apex glabrous	24
24a	Female-fertile lemmas conspicuously hairy, deeply cleft; palea apically notched, keels winged; hilum long-linear ..	Danthoniopsis
24b	Female-fertile lemmas not conspicuously hairy, not deeply cleft; palea entire, keels wingless; hilum short	Arundinella
25a	Female-fertile lemmas deeply cleft; panicle branchlets capillary; stigmas white	Trichopteryx
25b	Female-fertile lemmas not deeply cleft; panicle branchlets not capillary; stigmas golden-brown	Loudetia
26a	(10) Female-fertile lemmas and glumes of similar texture	27
26b	Female-fertile lemmas decidedly firmer than glumes	35
26c	Female-fertile lemmas less firm than glumes	57
27a	Female-fertile lemma margins tucked in onto palea (<i>Paspalum</i> type)	28
27b	Female-fertile lemma margins lying flat and exposed on palea (<i>Digitaria</i> type)	32
28a	Hairy callus present	Optismenus
28b	Hairy callus absent	29
29a	Upper glume of female-fertile spikelet spiny; transverse veins readily visible in leaf blade at least abaxially; female-fertile spikelets compressed laterally	Pseudechinolaena
29b	Upper glume of female-fertile spikelet not spiny; transverse veins very inconspicuous in blade; female-fertile spikelets compressed dorsiventrally	30
30a	Female-fertile lemmas conspicuously hairy	Entolasia
30b	Female-fertile lemmas not conspicuously hairy	31
31a	Inflorescence of spike-like main branches	Paspalum
31b	Inflorescence paniculate	Panicum
32a	(27) Ligule fringed	33
32b	Ligule not fringed	34
33a	Inflorescence of spike-like main branches; spikelets secund, consistently in long-and-short combinations; leaves mostly basal	Allotriopsis
33b	Inflorescence paniculate; fresh shoots aromatic; female-fertile lemmas with single median keel on back	Melinus
34a	Proximal lemmas less firm than female-fertile lemmas; mature lemmas with a clear germination flap; leaves not distinctly basally aggregated; mature spikelet-bearing axes not disarticulating	Digitaria
34b	Proximal lemmas similar in texture to female-fertile lemmas; no germination flap in lemmas; leaves mostly basal; mature spikelet-bearing axes disarticulating	Tarigidia
35a	(26) Female-fertile lemmas mucronate or awned	36
35b	Female-fertile lemmas not mucronate or awned	38
36a	Female-fertile spikelets abaxial (with lower glume on side away from rhachis or with upper lemma against rhachis)	Urochloa
36b	Female-fertile spikelets adaxial (with lower glume against rhachis or with upper lemma on side away from rhachis)	37
37a	Proximal lemmas $\pm$ equaling female-fertile lemmas; no bead-like 'callus' supporting spikelets	Brachiaria
37b	Proximal lemmas decidedly longer than female-fertile lemmas; spikelets supported on a hardened beadlike 'callus'	Eriochloa
38a	Female-fertile lemma margins lying flat and exposed on palea (<i>Digitaria</i> type)	39
38b	Female-fertile lemma margins tucked in onto palea (<i>Paspalum</i> type)	43
39a	Proximal lemmas of female-fertile spikelets awned; lodicules absent	Stereochlaena
39b	Proximal lemmas of female-fertile spikelets not awned	40
40a	Ligule fringed	41
40b	Ligule not fringed	42
41a	Spikelets consistently in long-and-short combinations; glumes equal or subequal in length in intact female-fertile spikelet; lemmas of proximal incomplete florets becoming indurate	Megaloprotachne
41b	Spikelets not in distinct long-and-short combinations; female-fertile spikelets not secund, compressed laterally, spikelets not all embedded in rhachis; mature spikelet-bearing axes not disarticulating	Tricholaena
42a	Inflorescence of spike-like main branches; spikelets secund; female-fertile spikelets compressed dorsiventrally; glumes not 1-keeled; rounded, flat or with more than 1 keel; lemmas rounded, flat or with 2 or more keels on back	Digitaria
42b	Inflorescence paniculate; spikelets not secund; female-fertile spikelets compressed laterally; glumes 1-keeled to middle or below; lemmas with single median keel on back	Phalaris
43a	(38) Inflorescence paniculate	44
43b	Inflorescence of spike-like main branches	49
44a	Upper glume distinctly saccate	Sacciolepis
44b	Glumes not saccate	45
45a	Female-fertile lemmas crested at tip	Acroceras
45b	Female-fertile lemmas not crested	46

46a	Female-fertile spikelets compressed laterally	47
46b	Female-fertile spikelets compressed dorsiventrally	48
47a	Ligule fringed; glumes very unequal in intact female-fertile spikelet; female-fertile lemmas rounded, flat, or with 2 or more keels on back; proximal incomplete florets of female-fertile spikelets male, lemmas decidedly longer than female-fertile lemmas	Tricholaena
47b	Ligule not fringed; glumes equal or subequal in length in intact female-fertile spikelet; female-fertile lemmas with single median keel on back; proximal incomplete florets of female-fertile spikelets sterile, lemmas shorter than female-fertile lemmas	Phalaris
48a	Female-fertile lemmas conspicuously hairy; pedicel apices discoid	Entolasia
48b	Female-fertile lemmas not conspicuously hairy; pedicel apices cupuliform	Panicum
49a	(43) Spikelets abaxial (with lower glume on side away from rhachis or with upper lemma against rhachis)	50
49b	Spikelets adaxial (with lower glume against rhachis or with upper lemma on side away from rhachis)	53
50a	Leaf blades cordate at base; female-fertile lemmas crested at tip	Acroceras
50b	Leaf blades not cordate at base; female-fertile lemmas not crested	51
51a	Hairy callus present	Oplismenus
51b	Hairy callus absent	52
52a	Glumes and/or sterile lemmas awned or acuminate-mucronate	Echinochloa
52b	Spikelets awnless, muticous	Paspalum
53a	Female-fertile spikelets with 1 glume; all spikelets slightly embedded in rhachis; leaf tips rounded	Axonopus
53b	Female-fertile spikelets with 2 glumes; spikelets not embedded in rhachis; leaf tips not rounded	54
54a	Upper glume of female-fertile spikelet spiny; transverse veins readily visible in leaf blade at least abaxially	Pseudechinochloa
54b	Upper glume of female-fertile spikelet not spiny; transverse veins very inconspicuous in blade	55
55a	Female-fertile lemmas conspicuously hairy	Entolasia
55b	Female-fertile lemmas not conspicuously hairy	56
56a	Female-fertile lemma smooth	Echinochloa
56b	Female-fertile lemma striate or rugose	Brachiaria
57a	(26) Female-fertile lemmas mucronate or awned	58
57b	Female-fertile lemmas not mucronate or awned	83
58a	Spikelets of sexually distinct kinds on the same plant—e.g. female or hermaphroditic and sterile or male only	59
58b	Spikelets alike in sexuality on the same plant	80
59a	Female-fertile spikelets compressed laterally	60
59b	Female-fertile spikelets not noticeably compressed	64
59c	Female-fertile spikelets compressed dorsiventrally	68
60a	Proximal incomplete florets of female-fertile spikelets male, paleate (but palea sometimes reduced or vestigial)	Sehima
60b	Proximal incomplete florets of female-fertile spikelets sterile, epaleate	61
61a	Inflorescence digitate or subdigitate	Arthraxon
61b	Inflorescence not digitate or subdigitate	62
62a	Spikelet-bearing units very much reduced, bearing 1 or a few spikelets	Chrysopogon
62b	Spikelet-bearing units 'racemes'	63
63a	Palea lacking within female-fertile lemma; fresh shoots aromatic	Cymbopogon
63b	Palea present within female-fertile lemma (but sometimes minute); fresh shoots not aromatic	Andropogon
64a	(59) Lower glume of female-fertile spikelet distinctly 2-keeled to middle or below	65
64b	Lower glume of female-fertile spikelet distinctly 2-keeled below upper quarter	67
65a	Spikelets all pedicellate; female-fertile lemmas entire; callus pointed; inflorescence not leafy, not spatheate; mature spikelet-bearing axes not disarticulating	Trachypogon
65b	Spikelets in pedicellate/sessile combinations; female-fertile lemmas incised; callus blunt; inflorescence leafy or spatheate; mature spikelet-bearing axes disarticulating	66
66a	Palea lacking within female-fertile lemma; fresh shoots aromatic	Cymbopogon
66b	Palea present within female-fertile lemma (but sometimes minute); fresh shoots not aromatic	Andropogon
67a	Ligule fringed; racemes solitary; female-fertile lemmas entire, 3- or 4-nerved	Heteropogon
67b	Ligule not fringed; racemes paired; female-fertile lemmas incised, 1-nerved	Hyparrhenia
68a	(59) Lower glume of female-fertile spikelet distinctly 2-keeled to middle or below	69
68b	Lower glume of female-fertile spikelet not distinctly 2-keeled below upper quarter	75
69a	Female-fertile lemmas entire	70
69b	Female-fertile lemmas incised	72
70a	Some spikelet pairs or triplets similar in form (homogamous)	Dichanthium
70b	All spikelet pairs or triplets differing in form (heterogamous)	71
71a	Spikelets in pedicellate/sessile combinations; callus blunt; female-fertile lemmas not conspicuously hairy; pedicels and internodes of rhachis with longitudinal, translucent furrow; lemmas of proximal incomplete florets nerveless	Bothriochloa
71b	Spikelets all pedicellate; callus pointed; female-fertile lemmas conspicuously hairy; pedicels and internodes of rhachis without longitudinal, translucent furrow; lemmas of proximal incomplete florets 2-nerved	Trachypogon

72a	Racemes solitary	Schizachyrium
72b	Racemes in groups	Ischaemum
72c	Racemes paired	73
73a	Fresh shoots aromatic; palea lacking within female-fertile lemma	Cymbopogon
73b	Fresh shoots not aromatic; palea present within female-fertile lemma (but sometimes minute)	74
74a	Palea three-quarters or more the length of female-fertile lemma	Ischaemum
74b	Palea conspicuous but less than three-quarters the length of female-fertile lemma	Diheteropogon
74c	Palea minute	Andropogon
75a	(68) Female-fertile lemmas entire	Heteropogon
75b	Female-fertile lemmas incised	76
76a	Inflorescence leafy or spatheate, comprising a complex of 'partial inflorescences' and intervening foliar organs	77
76b	Inflorescence not leafy, not spatheate, not comprising 'partial inflorescences' and foliar organs	79
77a	Racemes solitary; all spikelet pairs or triplets differing in form (heterogamous)	Monocymbium
77b	Racemes paired; some spikelet pairs or triplets similar in form (homogamous)	78
78a	Lower glume of female-fertile spikelet sulcate on back, upper glume 1-nerved	Hyperthelia
78b	Lower glume of female-fertile spikelet convex on back, upper glume 2- or 3-nerved	Hyparrhenia
79a	Spikelets apparently solitary, each accompanied by a barren pedicel; lodicules glabrous	Sorghastrum
79b	Spikelets paired, all pedicels spikelet-bearing; lodicules ciliate	Sorghum
80a	(58) Female-fertile lemmas conspicuously hairy	81
80b	Female-fertile lemmas not conspicuously hairy	82
81a	Perennial; spikelets consistently paired, in long-and-short combinations; lower glume of female-fertile spikelet distinctly 2-keeled to middle or below; lemmas entire	Miscanthus
81b	Annual; spikelets solitary, not in distinct long-and-short combinations; lower glume of female-fertile spikelet not distinctly 2-keeled below upper quarter; lemmas incised	Cleistanthus
82a	Spikelet-bearing rhachises substantial	Ischaemum
82b	Spikelet rhachises slender	Microstegium
83a	(57) Inflorescence comprising a complex of 'partial inflorescences' and intervening foliar organs	84
83b	Inflorescence not comprising 'partial inflorescences' and intervening foliar organs	86
84a	Pedicels of 'pedicellate' spikelets free of rhachis	Elionurus
84b	Pedicels of 'pedicellate' spikelets discernable, but fused with rhachis	85
85a	Lower glume of female-fertile spikelet globose, lacunose; 'pedicellate' spikelets reduced, herbaceous; lemmas of proximal incomplete florets nerveless	Hackelochloa
85b	Lower glume of female-fertile spikelet flattish, not lacunose; 'pedicellate' spikelets similar to female-fertile spikelets; lemmas of proximal incomplete florets 2-nerved	Hemarthria
85c	Lower glume of female-fertile spikelet flattish, not lacunose; 'pedicellate' spikelets reduced, herbaceous; lemmas of proximal incomplete florets 3- or 4-nerved	Rottboellia
86a	(83) Inflorescence of spike-like main branches	87
86b	Inflorescence a single raceme	88
86c	Inflorescence paniculate	89
87a	Ligule fringed	Eriochrysis
87b	Ligule not fringed	Urelytrum
88a	Ligule fringed; lower glume of pedicellate spikelet awnless; proximal incomplete florets of female-fertile spikelets sterile, lemmas decidedly longer than female-fertile lemmas; leaf auricles absent	Elionurus
88b	Ligule not fringed; lower glume of pedicellate spikelet with an awn 5–10 mm long (or longer); proximal incomplete florets of female-fertile spikelets male, lemmas $\pm$ equalling female-fertile lemmas; leaf auricles absent	Urelytrum
89a	Spikelets not in distinct long-and-short combinations; glumes very unequal in intact female-fertile spikelet	Melinis macrochaetia, M. minutiflora, M. tenuissima
89b	Spikelets consistently in long-and-short combinations; glumes equal or subequal in length in intact female-fertile spikelet	90
90a	Spikelets in pedicellate/sessile combinations; glumes of female-fertile spikelets very dissimilar in form or texture; styles free to their bases; lodicules present	Sorghum
90b	Spikelets all pedicellate; glumes of female-fertile spikelets $\pm$ similar in form and texture; styles fused basally; lodicules absent	Imperata

Key to genera in Group 3

1a	Inflorescence a single spike	2
1b	Inflorescence of spike-like main branches	12
1c	Inflorescence a false spike, with clusters of spikelets	34
1d	Inflorescence a single raceme	39
1e	Inflorescence paniculate	47
2a	Female-fertile florets 1 per spikelet	3
2b	Female-fertile florets more than 1 per spikelet	9
3a	Female-fertile lemmas with a single median keel on back	4
3b	Female-fertile lemmas rounded, flat or with 2 or more keels on back	6

- 4a Female-fertile spikelets disarticulating above glumes; glumes very unequal, upper glume 2- or 3-nerved; female-fertile lemmas and glumes of similar texture; lemmas conspicuously hairy **Harpachloa**
- 4b Female-fertile spikelets falling with the glumes; glumes equal or subequal in length, upper glume 1-nerved; female-fertile lemmas less firm than glumes; lemmas not conspicuously hairy 5
- 5a Plants caespitose; glumes of female-fertile spikelets awned, $\pm$ similar in form and texture; palea conspicuous but less than three-quarters the length of female-fertile lemma, nerveless **Perotis**
- 5b Plants long-rhizomatous or stoloniferous; glumes of female-fertile spikelets not awned, very dissimilar in form or texture; palea three-quarters or more the length of female-fertile lemma, with 2 well separated nerves **Mosdenia**
- 6a Glumes of spikelets dorsiventral to rhachis 7
- 6b Glumes of spikelets lateral to rhachis 8
- 7a Spikelets biseriate on one side of rhachis; female-fertile spikelets compressed dorsiventrally; lower glume 1-nerved; lemmas decidedly firmer than glumes **Enteropogon**
- 7b Spikelets distichously arranged on opposite sides of rhachis; female-fertile spikelets compressed laterally; lower glume nerveless; lemmas less firm than glumes **Oropetium**
- 8a Female-fertile lemmas 2-nerved; spikelets with female-fertile florets only; embryo at least a third as long as grain **Microchloa**
- 8b Female-fertile lemmas 3- or 4-nerved; spikelets with incomplete florets in addition to female-fertile florets; embryo less than a third the length of grain **Rendlia**
- 9a (2) Spikelets biseriate on one side of rhachis 10
- 9b Spikelets distichously arranged on opposite sides of rhachis 11
- 10a Female-fertile spikelets compressed dorsiventrally; glumes very unequal; lemmas not conspicuously hairy, back rounded, flat or with 2 or more keels; pericarp fused **Enteropogon**
- 10b Female-fertile spikelets compressed laterally; glumes equal or subequal in length; lemmas conspicuously hairy, back with single median keel; pericarp free **Tetrapogon**
- 11a Hairy callus present; female-fertile lemmas with single median keel on back; leaves mostly basal **Tripogon**
- 11b Hairy callus absent; female-fertile lemmas rounded, flat or with 2 or more keels on back; leaves not distinctly basally aggregated **Lolium**
- 12a (1) Inflorescence digitate or subdigitate 13
- 12b Inflorescence not digitate or subdigitate 24
- 13a Hairy callus present 14
- 13b Hairy callus absent 20
- 14a Female-fertile lemmas with a single median keel on back 15
- 14b Female-fertile lemmas rounded, flat or with 2 or more keels on back 17
- 15a Glumes equal or subequal in length in intact female-fertile spikelet **Tetrapogon**
- 15b Glumes very unequal in intact female-fertile spikelet 16
- 16a Spikelets with conventional internode spacings; callus blunt; distal florets reduced in size but not awnlike; leaves not distinctly basally aggregated; stigmas white **Chloris**
- 16b Spikelets with distinctly elongated rhachilla internodes between florets; callus pointed; distal florets reduced to awns; leaves mostly basal; stigmas golden-brown **Lophachme**
- 17a Spikelets compressed laterally, lemmas conspicuously hairy 18
- 17b Spikelets compressed dorsiventrally, lemmas not conspicuously hairy 19
- 18a Ligule fringed; female-fertile florets 1 per female-fertile spikelet; glumes $\pm$ equalling or longer than adjacent lemmas; grain compressed laterally **Schoenfeldia**
- 18b Ligule not fringed; female-fertile florets more than 1 per female-fertile spikelet; glumes shorter than adjacent lemmas; grain compressed dorsiventrally **Lintonia**
- 19a Spikelets solitary; female-fertile spikelets disarticulating above glumes; glumes very unequal, hairless; lemmas decidedly firmer than glumes **Enteropogon**
- 19b Spikelets consistently paired; female-fertile spikelets falling with glumes; glumes equal or subequal, hairy; lemmas less firm than glumes **Eulalia**
- 20a (13) Female-fertile florets 1 per spikelet 21
- 20b Female-fertile florets more than 1 per spikelet 22
- 21a Plants long-rhizomatous or stoloniferous; glumes pointed, not awned, $\pm$ similar in form and texture; culm internodes conspicuously hollow **Cynodon**
- 21b Plants caespitose; glumes not pointed, awned, very dissimilar in form and texture; culm internodes solid; plants caespitose **Eustachys**
- 22a Inflorescence axes not ending in spikelets; styles fused basally **Dactyloctenium**
- 22b Inflorescence axes ending in spikelets; styles free to their bases 23
- 23a Glumes very unequal in intact female-fertile spikelet; lemmas entire; grain not grooved **Elcusine**
- 23b Glumes equal or subequal in length in intact female-fertile spikelet; lemmas incised; grain longitudinally grooved **Acrachne**
- 24a (12) Female-fertile florets 1 per spikelet 25
- 24b Female-fertile florets more than 1 per spikelet 26
- 25a Hairy callus present **Catalepis**
- 25b Hairy callus absent **Dinebra**
- 26a Glumes all shorter than adjacent lemmas in intact spikelets 27
- 26b Glumes $\pm$ equalling or longer than adjacent lemmas in intact spikelets 31

27a	Female-fertile lemmas with a single median keel on back	28
27b	Female-fertile lemmas rounded, flat or with 2 or more keels on back	30
28a	Glumes of female-fertile spikelets lateral to rachis	Pogonarthria
28b	Glumes of female-fertile spikelets dorsiventral to rachis	29
29a	Spikelets subsessile; spikelet-bearing rhachises substantial; callus absent; grain longitudinally grooved; surface of grain sculptured	Acrachne
29b	Some spikelets pedicellate; spikelet-bearing rhachises slender; callus short; grain not grooved; surface of grain smooth	Leptochloa
30a	(27) Upper glume of female-fertile spikelet 1-nerved	Diplachne
30b	Upper glume of female-fertile spikelet 2- or 3-nerved	Coelachyrum
31a	(26) Ligule fringed	32
31b	Ligule not fringed	33
32a	Glumes of female-fertile spikelets $\pm$ equalling or longer than spikelets, equal or subequal in length, awned; spikelets sessile; no hairy callus	Dinebra
32b	Glumes of female-fertile spikelets markedly shorter than spikelets, very unequal, not awned; spikelets subsessile; hairy callus present	Leptocarydion
33a	Some spikelets pedicellate; spikelets not all embedded in rhachis; rhachilla of female-fertile spikelets not disarticulating between florets; lemmas with a single median keel on back; leaves mostly basal	Bewisia
33b	Spikelets subsessile; all spikelets $\pm$ embedded in rhachis; rhachilla of female-fertile spikelets disarticulating between florets; lemmas rounded, flat or with 2 or more keels on back; leaves not distinctly basally aggregated	Trichoneura
34a	(1) Ligule fringed	35
34b	Ligule not fringed	38
35a	Female-fertile florets 1 per spikelet	36
35b	Female-fertile florets more than 1 per spikelet	37
36a	Female-fertile spikelets disarticulating above glumes; upper glume not spiny; lower glume 1-nerved; lemmas not conspicuously hairy; pericarp free	Sporobolus
36b	Female-fertile spikelets falling with glumes; upper glume spiny; lower glume nerveless; lemmas conspicuously hairy; pericarp fused	Tragus
37a	Spikelets with bractiform involucre; glumes $\pm$ equalling or longer than adjacent lemmas	Elytrophorus
37b	Spikelets without bractiform involucre; glumes all shorter than adjacent lemmas in intact spikelets	Eragrostis
38a	(34) Spikelets with bractiform involucre; female-fertile florets more than 1 per female-fertile spikelet; lemmas with a single median keel on back, 3- or 4-nerved; palea conspicuous but less than three-quarters the length of lemma	Elytrophorus
38b	Spikelets without bractiform involucre; female-fertile florets 1 per female-fertile spikelet; lemmas rounded, flat or with 2 or more keels on back, 5-nerved; palea three-quarters or more the length of lemma	Hordeum
39a	(1) Spikelets falling with glumes	40
39b	Spikelets disarticulating above glumes	42
40a	Spikelets with distal incomplete florets and/or rhachilla apex forming a terminal clavate appendage; sheath margins joined for at least a quarter of their length; glumes of female-fertile spikelets not 1-keeled; rounded, flat or with more than 1 keel	Melica
40b	Spikelets without a terminal clavate appendage; sheath margins free; glumes of female-fertile spikelets 1-keeled to middle or below	41
41a	Female-fertile lemmas mucronate or awned; palea three-quarters or more the length of female-fertile lemma, with 2 well separated nerves; leaves mostly basal; styles free to their bases	Fingerhuthia
41b	Female-fertile lemmas not mucronate or awned; palea conspicuous but less than three-quarters the length of female-fertile lemma, nerveless; leaves not distinctly basally aggregated; styles fused basally	Perotis
42a	(39) Ligule fringed	43
42b	Ligule not fringed	45
43a	Female-fertile florets more than 1 per female-fertile spikelet; inflorescence paniculate	Merxmüllera
43b	Female-fertile florets 1 per female-fertile spikelet; inflorescence paniculate or a solitary raceme	44
44a	Inflorescence a solitary raceme, or digitate or subdigitate; hairy callus present; female-fertile lemmas mucronate or awned; pericarp fused; grain longitudinally grooved	Enteropogon
44b	Inflorescence paniculate; no hairy callus; female-fertile lemmas not mucronate or awned; pericarp free; grain not grooved	Sporobolus
45a	(42) Sheath margins usually joined over at least a quarter of their length; ovary with conspicuous apical appendage; grain compressed laterally	Bromus
45b	Sheath margins free; ovary without conspicuous apical appendage; grain compressed dorsiventrally	46
46a	Glumes of female-fertile spikelets $\pm$ similar in form and texture; lemmas and glumes of similar texture; palea entire; nodes conspicuously hairy; rhachises hollowed	Brachypodium
46b	Glumes of female-fertile spikelets very dissimilar in form and texture; lemmas decidedly firmer than glumes; palea apically notched; nodes glabrous; rhachises not flattened or hollowed, not winged	Vulpia
47a	(1) Ligule fringed	48
47b	Ligule not fringed	53
48a	Female-fertile florets 1 per female-fertile spikelet	49
48b	Female-fertile florets more than 1 per spikelet	51
49a	Female-fertile lemmas mucronate or awned; glumes hairy	Fingerhuthia
49b	Female-fertile lemmas not mucronate or awned; glumes hairless	50

- 50a Female-fertile spikelets disarticulating above glumes; lower glume 1-nerved; lemmas not conspicuously hairy; no hairy callus; styles free to their bases **Sporobolus**
- 50b Female-fertile spikelets falling with glumes; lower glume nerveless; lemmas conspicuously hairy; hairy callus present; styles fused basally **Catalepis**
- 51a (48) Hairy callus present **Merxmüllera**
- 51b Hairy callus absent 52
- 52a Upper glume of female-fertile spikelet 1-nerved **Eragrostis**
- 52b Upper glume of female-fertile spikelet 2- or 3-nerved **Coelachyrum**
- 53a (47) Spikelets with distal incomplete florets and/or rachilla apex forming a terminal clavate appendage; female-fertile spikelets falling with glumes; lodicules fused **Melica**
- 53b Spikelets without a terminal clavate appendage; female-fertile spikelets disarticulating above glumes; lodicules free 54
- 54a Sheath margins joined over at least a quarter of their length; ovary with a conspicuous apical appendage; grain compressed laterally **Bromus**
- 54b Sheath margins free; ovary without a conspicuous apical appendage; grain compressed dorsiventrally 55
- 55a Glumes of female-fertile spikelets $\pm$ similar in form and texture; lemmas and glumes of similar texture; palea entire; rachises hollowed, not winged; nodes glabrous **Brachypodium**
- 55b Glumes of female-fertile spikelets very dissimilar in form or texture; lemmas decidedly firmer than glumes; palea apically notched; rachises not flattened or hollowed, not winged; nodes glabrous **Vulpia**

Key to genera in Group 4

- 1a Ligule fringed 2
- 1b Ligule not fringed 29
- 2a Female-fertile spikelets disarticulating above glumes 3
- 2b Female-fertile spikelets falling with glumes 26
- 3a Female-fertile florets 1 per female-fertile spikelet 4
- 3b Female-fertile florets more than 1 per female-fertile spikelet 13
- 4a Female-fertile lemmas not mucronate or awned; lower glume of female-fertile spikelet 1-nerved **Sporobolus**
- 4b Female-fertile lemmas mucronate or awned 5
- 5a Awns trifid 6
- 5b Awns not trifid 8
- 6a Awns plumose; paleas of female-fertile florets indurate **Stipagrostis**
- 6b Awns not plumose; paleas of female-fertile florets not indurate 7
- 7a Glumes of female-fertile spikelets 1-keeled to middle or below; lower glume 1-nerved; mature female-fertile lemmas with a clear germination flap; grain not grooved; embryo at least a third as long as grain **Aristida**
- 7b Glumes of female-fertile spikelets not 1-keeled; rounded, flat or with more than 1 keel; lower glume 2- or 3-nerved; no germination flap in female-fertile lemmas; grain longitudinally grooved; embryo less than a third the length of grain **Sartidia**
- 8a Hairy callus present 9
- 8b Hairy callus absent 12
- 9a Female-fertile lemmas and paleas becoming distinctly indurate when mature; palea back rounded; female-fertile spikelets with female-fertile florets only; hilum long-linear **Stipa**
- 9b Female-fertile lemmas and paleas not becoming indurate; palea back 2-keeled; spikelets with incomplete florets in addition to female-fertile florets; hilum short 10
- 10a Female-fertile lemmas not conspicuously hairy; incomplete florets proximal to female-fertile florets **Arundinella**
- 10b Female-fertile lemmas conspicuously hairy; incomplete florets distal to female-fertile florets; hilum short 11
- 11a Rachilla of female-fertile spikelets disarticulating between florets; lemmas and glumes of similar texture, lemmas entire, 3- or 4-nerved; leaves mostly basal **Stiburus**
- 11b Rachilla of female-fertile spikelets not disarticulating between florets; lemmas decidedly firmer than glumes, incised, 8- or 9-nerved; leaves not distinctly basally aggregated **Enneapogon**
- 12a (8) Glumes of female-fertile spikelets awned; lemmas 2-lobed, 5-nerved; palea apically notched; female-fertile spikelets with female-fertile florets only **Lagurus**
- 12b Glumes of female-fertile spikelets not awned; lemmas 9-lobed, 8- or 9-nerved; palea entire; spikelets with incomplete florets in addition to female-fertile florets **Enneapogon**
- 13a (3) Glumes all shorter than adjacent lemmas in intact female-fertile spikelets 14
- 13b Glumes $\pm$ equalling or longer than adjacent lemmas in intact female-fertile spikelets 19
- 14a Leaves hard, woody, needle-like, plants prickly **Odysea**
- 14b Leaves not needle-like, plants not prickly 15
- 15a Hairy callus present 16
- 15b Hairy callus absent 18
- 16a Female-fertile lemmas entire **Stiburus**
- 16b Female-fertile lemmas incised 17
- 17a Female-fertile lemmas deeply cleft; grain trigonous; fruit linear; hilum short; embryo at least a third as long as grain **Triraphis**
- 17b Female-fertile lemmas not deeply cleft; grain not noticeably compressed; fruit fusiform; hilum long-linear; embryo less than a third the length of grain **Styppeiochloa**

18a	Upper glume of female-fertile spikelet 1-nerved	Eragrostis
18b	Upper glume of female-fertile spikelet 2- or 3-nerved	Coelachyrum
19a	Rhachilla of female-fertile spikelets not disarticulating between florets	20
19b	Rhachilla of female-fertile spikelets disarticulating between florets	21
20a	Female-fertile lemmas 2-lobed, with 9 awns (1 terminating each lobe); anthers up to 2,5 mm long	Enneapogon
20b	Female-fertile lemmas 6-lobed, with 5 awns (1 arising between each pair of lobes); anthers longer than 2,5 mm	Schmidtia
21a	Panicle open	22
21b	Panicle contracted	24
22a	Callus long, pointed	Cortaderia
22b	Callus short, blunt	23
23a	Leaf blades wider than 15 mm; plants long-rhizomatous or stoloniferous; young vegetative shoots bursting through bases of subtending sheaths	Arundo
23b	Leaf blades narrower than 15 mm; plants usually caespitose; young vegetative shoots emerging from between subtending sheaths and stem	Pentameris
24a	Female-fertile lemmas entire	Stiburus
24b	Female-fertile lemmas incised	25
25a	Female-fertile spikelets with female-fertile florets only	Pentaschistis
25b	Spikelets with incomplete florets in addition to female-fertile florets	Merxmüllera
26a	(2) Lower glume of female-fertile spikelet nerveless	Catalepis
26b	Lower glume of female-fertile spikelet 1-nerved	27
27a	Glumes of female-fertile spikelets markedly shorter than spikelets, shorter than adjacent lemmas; palea thinner than lemma	Eragrostis
27b	Glumes of female-fertile spikelets $\pm$ equalling or longer than spikelets and adjacent lemmas; palea similar in texture to lemma	28
28a	Upper glume of female-fertile spikelet 1-nerved; distal florets seemingly merely underdeveloped, not clearly specialized or peculiarly modified in form; leaves mostly basal; lodicules fleshy	Fingerhuthia
28b	Upper glume of female-fertile spikelet 2- or 3-nerved; distal florets clearly specialized, peculiarly modified; leaves not distinctly basally aggregated; lodicules membranous	Holcus
29a	(1) Female-fertile spikelets falling with glumes	30
29b	Female-fertile spikelets disarticulating above glumes	32
30a	Spikelets with distal incomplete florets and/or rhachilla apex forming a terminal clavate appendage; sheath margins joined for at least a quarter of their length; lodicules fleshy	Melica
30b	Spikelets without a terminal clavate appendage; sheath margins free; lodicules membranous	31
31a	Glumes of female-fertile spikelets 1-keeled to middle or below; upper glume 2- or 3-nerved; lemmas with a single median keel on back, decidedly firmer than glumes; spikelets with incomplete florets in addition to female-fertile florets	Holcus
31b	Glumes of female-fertile spikelets not 1-keeled; rounded, flat or with more than 1 keel; upper glume 1-nerved; lemmas rounded, flat or with 2 or more keels on back, less firm than glumes; female-fertile spikelets with female-fertile florets only	Polypogon
32a	(29) Female-fertile florets 1 per female-fertile spikelet	33
32b	Female-fertile florets more than 1 per female-fertile spikelet	39
33a	Female-fertile spikelets without glumes, unconventional and hard to interpret	Leersia
33b	Female-fertile spikelets with readily identifiable glumes, lemmas and paleas	34
34a	Glumes very unequal in intact female-fertile spikelet	Festuca africana
34b	Glumes equal or subequal in length in intact female-fertile spikelet	35
35a	Glumes all shorter than adjacent lemmas in intact female-fertile spikelets; hairy callus present	Stipa
35b	Glumes $\pm$ equalling or longer than adjacent lemmas in intact female-fertile spikelets	36
36a	Female-fertile lemmas decidedly firmer than glumes	Stipa
36b	Female-fertile lemmas less firm than glumes	37
36c	Female-fertile lemmas and glumes of similar texture	38
37a	Callus hairs present, longer than 0,5 mm	Calamagrostis
37b	Callus hairs absent, or if present then shorter than 0,5 mm	Agrostis
38a	(36) Panicle open; callus pointed; glumes of female-fertile spikelets not awned; spikelets with incomplete florets in addition to female-fertile florets; ovary apex hairy	Avena
38b	Panicle contracted; callus blunt; glumes of female-fertile spikelets awned; female-fertile spikelets with female-fertile florets only; ovary apex glabrous	Lagurus
39a	Lemmas as broad as long, gibbous, cordate at base	Briza
39b	Lemmas not as in <i>Briza</i>	40
40a	Glumes of female-fertile spikelets very dissimilar in form or texture	Vulpia
40b	Glumes of female-fertile spikelets $\pm$ similar in form and texture	41
41a	Glumes all shorter than adjacent lemmas in intact female-fertile spikelets	42
41b	Glumes $\pm$ equalling or longer than adjacent lemmas in intact female-fertile spikelets	54
42a	Upper glume of female-fertile spikelet 1-nerved	43
42b	Upper glume of female-fertile spikelet 2- or 3-nerved	44

- 42c Upper glume of female-fertile spikelet (4)5(6)-nerved 52
 42d Upper glume of female-fertile spikelet 7–10-nerved 53
- 43a Female-fertile spikelets shorter than 3 mm; stamens 2 per female-fertile floret; lodicules fleshy; hilum short; embryo at least a third as long as grain **Diandrochloa**
 43b Female-fertile spikelets longer than 6 mm; stamens 3 per female-fertile floret; lodicules membranous; hilum long-linear; embryo less than a third the length of grain **Festuca**
- 44a Female-fertile lemmas and glumes of similar texture 45
 44b Female-fertile lemmas decidedly firmer than glumes 51
- 45a Female-fertile lemmas with a single median keel on back 46
 45b Female-fertile lemmas rounded, flat or with 2 or more keels on back 49
- 46a Sheath margins joined for at least a quarter of their length 47
 46b Sheath margins free 48
- 47a Leaves mostly basal; ovary apex glabrous, without a conspicuous apical appendage; mature grain shorter than 4 mm; caryopsis free from both lemma and palea **Poa**
 47b Leaves not distinctly basally aggregated; ovary apex hairy, with a conspicuous apical appendage; mature grain 4–10 mm long; caryopsis adhering to lemma and/or palea **Bromus**
- 48a Palea similar in texture to lemma **Poa**
 48b Palea thinner than lemma **Koeleria**
- 49a (45) Glumes equal or subequal in length in intact female-fertile spikelet **Bromus**
 49b Glumes very unequal in intact female-fertile spikelet 50
- 50a Ovary with a conspicuous apical appendage; grain compressed laterally; lodicules not toothed **Bromus**
 50b Ovary without a conspicuous apical appendage; grain compressed dorsiventrally; lodicules toothed **Festuca**
- 51a (44) Callus pointed, hairy; female-fertile lemmas incised, back rounded, flat or with 2 or more keels; rhachilla hairy **Helictotrichon**
 51b Callus blunt, not hairy; female-fertile lemmas entire, back with a single median keel; rhachilla not hairy **Dactylis**
- 52a (42) Ovary with a conspicuous apical appendage; ligule not truncate; grain compressed dorsiventrally; lodicules not toothed **Bromus**
 52b Ovary without a conspicuous apical appendage; ligule truncate; grain compressed dorsiventrally; lodicules toothed **Festuca**
- 53a (42) Sheath margins joined over at least a quarter of their length; ovary with a conspicuous apical appendage; rhachises not flattened or hollowed, not winged; grain compressed laterally; lodicules glabrous **Bromus**
 53b Sheath margins free; ovary without a conspicuous apical appendage; rhachises hollowed; grain compressed dorsiventrally; lodicules ciliate **Brachypodium**
- 54a (41) Female-fertile lemmas with a single median keel on back; grain not grooved **Koeleria**
 54b Female-fertile lemmas rounded, flat or with 2 or more keels on back; grain longitudinally grooved **Avena**

Acrachne Wight & Arn. ex Chiov.

(s. Afr.: 1 sp.)

9903311

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 31.**racemosa (Roem. & Schult.) Ohwi**(=*A. verticillata* (Roxb.) Chiov.)

Annual, tufted (culms erect or geniculately ascending), up to 0,8 m high. Leaf blades 120–200 mm long, 8–15 mm wide. Spikelets 6–9 mm long. Inflorescence with 5–10 spike-like racemes in 1–3 whorls; spikelets 10–15-flowered; glumes and lemmas extending into awns for a third to two-thirds of their length. Flowering January to April. Sandy soil in moist and shady places. Pienaar 253.

W S C N E

Acroceras Stapf (s. Afr.: 1 sp.)

9901121

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 32.**macrum Stapf**

Perennial, rhizomatous and tufted, up to 1,1 m high. Rhizome creeping extensively. Leaf blades up to 120 mm long, 10 mm wide. Ligule a very short rim of hairs. Spikelets 4–5 mm long, 1,5 mm wide, with appendages; lower glume two-thirds the length of spikelet; upper glume equalling length of spikelet. Flowering November to July. Grows in flooded areas near rivers, swamps or vleis. Ellis 1860.

W S C N E

Agrostis L. (s. Afr.: 11 spp.)

9902430

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 32–35.**barbuligera Stapf var. barbuligera**

Perennial, tufted, up to 0,8 m high. Leaf blades up to 250 mm long, 2–6 mm wide (flat). Basal sheaths splitting into fibres. Spikelets 4,0–5,5 mm long. Panicle branches flexuous, spreading at maturity; rhachilla produced as a hairy bristle; lemmas awned from near base. Flowering November to March. Mountain grassland. Kluge 1799.

W S C N E

barbuligera Stapf var. longipilosa Gooss. & Papendorff

Spikelets 3,0–3,5 mm long. Differs from typical variety in its smaller spikelets, with more hairy lemmas. Van der Schijff 4776.

W S C N E

bergiana Trin. var. laeviuscula Stapf

Delicate, weak perennial or annual, up to 300 mm tall. Leaf blades up to 90 mm long, 1–2 mm wide. Spikelets 2,5–3,0 mm long. Panicle very diffuse, branches hair-

like; pedicels 5–10 mm long; paleas present. *Flowering October to February*. Mountain grassland in sheltered or wet places. *De Winter & Codd 209*.

W S C N E

continuata Stapf
(= *A. natalensis* Stapf)

Coarse perennial, tufted, up to 0,9 m high. Leaf blades up to 250 mm long, up to 6(–8) mm wide. Spikelets ± 5 mm long, overlapping. Inflorescence dense, narrow and spikelike. *Flowering December to April*. Vlei grassland and wet places, sometimes at high altitudes. *Pole-Evans 1968*.

W S C N E

eriantha Hack. var. **eriantha**

Perennial, rhizomatous and tufted, up to 0,7 m high. Leaf blades up to 180 mm long, 1–2 mm wide (folded). Spikelets 3,5–5,0 mm long. Panicle branches rigid, straight, held ascending at maturity; rhachillas not produced; lemmas awned from ± middle. *Flowering January to April*. Wet places, sometimes in disturbed areas or cultivation. *Smook 5003*.

W S C N E

eriantha Hack. var. **planifolia** Gooss. & Papendorf

Doubtfully separate from typical variety, but with flat leaf blades and somewhat longer callus hairs. *Pole-Evans 666*.

W S C N E

gigantea Roth

Perennial, usually stoloniferous (culms decumbent), up to 0,75 m high. Leaf blades up to 90 mm long, 3–5 mm wide. Spikelets 1,5–2,5 mm long. Panicle open, 70–200 mm long, branches ascending; rhachilla not produced; lemmas glabrous. Wet disturbed places. *Burt Davy 9233*.

W S C N E

lachnantha Nees var. **lachnantha**

(= *A. huttoniae* (Hack.) C.E. Hubb.,
= *A. lachnantha* Nees var. *glabra* Gooss. & Papendorf)

Short-lived perennial or annual (usually robust), loosely tufted, up to 0,9 m high. Leaf blades 70–200 mm long, 2–4 mm wide. Spikelets 1,5–2,5(–3,0) mm long. Panicle 150–400 mm long, narrow and sinuous, branches held nearly erect. *Flowering October to March (occasionally earlier or later)*. Riverbanks and wet places. *Oakes & Scheepers 301*.

W S C N E

montevideensis Spreng. ex Nees

Annual, up to 0,6 m high. Leaf blades up to 130 mm long, 1–2 mm wide. Spikelets 1,5–2,5 mm long. Panicle very diffuse, branches hair-like; pedicels 20 mm long or more; paleas absent. *Flowering November to April*. Moist and disturbed places in mountain grassland. Naturalized. *Story 5438*.

W S C N E

Alloteropsis Presl (s. Afr.: 3 spp.) 9900940

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 36–37.

papillosa Clayton

Perennial, tufted, up to 0,7 m high. Leaf blades 40–250 mm long (bases rounded to auriculate, margins ciliate); 2–8 mm wide. Spikelets 3,0–4,5 mm long. Culm bases knotted, with a few hairy old leaf sheaths. Palea with globular hairs. *Flowering November to May*. Sandy soil in open or shaded habitats (Kruger National Park). *Brynard & Pienaar 4419*.

W S C N E

semialata (R. Br.) Hitchc. subsp. **semialata**

Perennial, short-rhizomatous and tufted, up to 1,5 m high. Leaf blades 3–5(–6) mm wide (usually curved inward or loosely rolled, sparsely hairy, base tapering, tip gradually tapering, margins not ciliate). Basal parts bulbous, rounded in silhouette; basal sheaths with ribs 0,5–1,1 mm wide. Racemes often longer than 80 mm, with light-coloured spikelets loosely arranged; palea glabrous or with sparse hairs. *Flowering September to March*. Grasslands and bushveld. *Van der Schijff 2035*.

W S C N E

semialata (R. Br.) Hitchc. subsp. **eckloniana** (Nees)

Gibbs-Russ.
(= *A. semialata* (R. Br.) Hitchc. var. *ecklonii* (Stapf) Stapf)

Perennial, short-rhizomatous and tufted, up to 1,1 m high. Leaf blades 3–12 mm wide (flat, base tapering, tip tapering abruptly, velvety to sparsely hairy, margins not ciliate). Basal parts V-shaped in silhouette, not bulbous; basal sheaths with veins to 0,3 mm wide. Spikelets 5–8 mm long. Racemes often shorter than 80 mm, with dark-coloured spikelets tightly packed; palea glabrous or with sparse hairs. *Flowering September to March (sometimes in other months)*. Grassland, rocky places and forest margins; usually at higher altitudes and more acid soil than subsp. *semialata*. *Smook 2586*.

W S C N E

Andropogon L. (s. Afr.: 15 spp.) 9900710

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 38–42.

appendiculatus Nees

Perennial, densely tufted, up to 1,3 m high. Leaf blades 150–500 mm long, up to 6 mm wide. Basal sheaths keeled, flattened, yellow, becoming brown, shining. Spikelets (sessile and pedicellate) 5–7 mm long, (0,7–)0,9–1,2 mm wide. Inflorescence of 1 or 2 flowering branches per culm, racemes 4–20 per spathe, (30–)60–150 mm long, dark purple, with short hairs, pedicels rounded, slightly clavate; callus of sessile spikelets inserted in a membranous-edged socket, lower glume deeply but broadly grooved. Lemma awn 10–15 mm long. *Flowering October to April*. Wet or shady places. *Devenish 1118*.

W S C N E

chinensis (Nees) Merr.

(= *A. schinzii* Hack.)

Perennial, densely tufted, up to 1,2 m high, glaucous grey, reddish tinged. Leaf blades 100–400 mm long, up to 8 mm wide. Base slightly bulbous; culms branched. Spikelets (sessile) 5–7 mm long (pedicellate somewhat shorter). Racemes 2 or 3 per spatheole, pedicels cuneate; lower glume of sessile spikelets deeply and narrowly grooved, upper glume awned, both glumes of pedicellate spikelets with an awn 4–7 mm long. *Flowering December to June*. Rocky hillsides and often in poor sandy soil. *Codd 4029*.

W S C N E

distachyos L.

Perennial, rhizomatous and tufted, up to 1 m high, base with silky hairs. Leaf blades 70–200 mm long, 2–4 mm wide. Spikelets (sessile) 9–11 mm long (pedicellate shorter). Racemes 2 per spathe, pedicels stout, slightly clavate; lower glume of sessile spikelets flat on back, broadly winged on upper third, tip bidentate, often awned. *Flowering January to June*. Mountain grassland. *Van der Schijff 5583*.

W S C N E

eucomus Nees

Perennial, densely tufted, up to 0,9 m high. Leaf blades 40–200 mm long, up to 4 mm wide. Spikelets 2–3 mm long (all sessile, accompanied by a hairy empty pedicel). Inflorescence plumose, of 2–6 flowering branches; racemes 2–5 per spathe, with white silky hairs twice as long as spikelets; lower glume of sessile spikelets deeply and narrowly grooved. *Flowering November to May*. Vleis and wet places. *Louw 870*.

W S C N E

fastigiatus Sw.

(= *Diectomis fastigiata* (Sw.) Kunth)

Annual, tufted, up to 500 mm tall, reddish brown. Leaf blades 50–300 mm long, 1–4 mm wide. Spikelets (sessile) 4–5 mm long (pedicellate longer and wider). Inflorescences with numerous flowering branches per culm; racemes solitary in spathes; lower glume of sessile spikelet very deeply and narrowly grooved, lower glume of pedicellate spikelet large, flat, papery, reddish, with an awn 5–7 mm long. *Flowering April to May*. Dry sandy soil. *Codd 3946*.

W S C N E

gayanus Kunth var. polycladus (Hack.) Clayton

(= *A. gayanus* Kunth var. *squamulatus* (Hochst.) Stapf)

Robust perennial, tufted (culms branched), up to 3,6 m high, glaucous. Leaf blades up to 0,6 m long, 5–20 mm wide (in middle, base narrow). Spikelets (sessile) 6,0–7,5 mm long (pedicellate a little shorter). Racemes 2 per spathe, pedicels cuneate; lower glume of sessile spikelet broad, flattish but with a narrow central furrow; lower or both glumes of pedicellate spikelet with awns to 10 mm. *Flowering December to June*. Bushveld. *Arcocks 16765*.

W S C N E

huillensis Rendle

Perennial, tufted, up to 1,8 m high. Leaf blades 80–400 mm long, 2–4 mm wide. Spikelets (sessile) 4–5 mm long (pedicellate sometimes slightly longer, but usually reduced). Inflorescence plumose, with 5–7 flowering branches per culm; racemes 4–10 per spathe, with white silky hairs as long as sessile spikelet; lower glume of sessile spikelets deeply and broadly grooved. *Flowering September to June (but usually in autumn)*. Wet places, usually on sand. *Repton 4058*.

W S C N E

lacunosus J.G. Anderson

Perennial, straggling, up to 0,6 m high. Leaf blades 80–150 mm long, 2–5 mm wide. Spikelets (sessile) 5–7 mm long (pedicellate longer). Racemes 2 or 3, pedicels linear; lower glume of sessile spikelets broadly rounded on either side of a deep deep central furrow, pitted between veins. *Flowering November to April*. Swampy places at high altitudes. *Codd 6441*.

W S C N E

laxatus Stapf

Perennial, tufted, up to 0,9 m high. Leaf blades 20–200 mm long, 2–3 mm wide. Spikelets (sessile) 4–6 mm long (pedicellate reduced or suppressed). Inflorescence plumose; racemes 2 or 3 per spathe, with white silky hairs as long as sessile spikelets; lower glume of sessile spikelets deeply and broadly grooved. *Flowering October to March*. Wet places. *De Winter & Codd 218*.

W S C N E

mannii Hook. f.

(= *A. platybasis* J.G. Anderson)

Perennial, densely tufted, up to 0,6 m high. Leaf blades 20–250 mm long, 2–8 mm wide. Basal sheaths keeled, flattened. Spikelets (sessile) 4,5–8,0 mm long (pedicellate equalling it or slightly longer), 0,9–1,1 mm wide. Inflorescence with short hairs; racemes 2 or 3 per spathe, 25–60 mm long, pedicels linear, rounded; lower glume of sessile spikelets shallowly concave below. *Flowering October to December*. Mountain grassland in moist places. *De Winter & Codd 199*.

W S C N E

schirensis A. Rich.

(= *A. schirensis* A. Rich. *angustifolius* Stapf)

Perennial, densely tufted, up to 1,2 m high, reddish. Leaf blades 90–600 mm long, 3–14 mm wide. Spikelets (sessile) 5–7 mm long (pedicellate slightly longer). Racemes 2(–5), pedicels clavate; lower glume of sessile spikelets deeply and very narrowly grooved, glumes unawned; lemma awn 25–30 mm long. *Flowering December to April*. Open veld and rocky hillsides. *Scheepers 1236*.

W S C N E

Anthephora Schreb. (s. Afr.: 4 spp.) 9901380

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 42–43.

argentea Gooss.

(= *A. angustifolia* Gooss.)

Perennial, tufted, up to 1 m tall. Leaf blades 100–150 mm long, 1–3 mm wide, blue-green, rigid, often folded, tip shortly tapered to a stiff point; ligule up to 8 mm long and often split. Culms slender and wiry. Spikelets $\pm$ 6 mm long, 2 mm wide, covered with hairs. Inflorescence 3–6 mm wide; lower glumes acute, rarely acuminate. *Flowering November to April*. Sandy soil, often on dunes, confined to Kalahari Thornveld. *Kars* 58.

W S C N E

pubescens Nees

Perennial, tufted, up to 1.5 m high. Leaf blades 100–150 mm long, 3–5 mm wide. Culms not branched; leaves long-tapering to soft point, often curling. Spikelets $\pm$ 8 mm long, 3 mm wide, densely covered with hairs; lower glumes acuminate or shortly awned. Inflorescence straw-coloured or dull purple, 5–10 mm wide. *Flowering December to April*. Shallow, acid, sandy soils, often on hillsides. *Smook* 4441.

W S C N E

Anthoxanthum L. (s. Afr.: 5 spp.) 9901640

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 43–45.

ecklonii (Nees ex Trin.) Stapf

Perennial, loosely or densely tufted and rhizomatous, up to 0.8 m high. Leaf blades 70–250 mm long, 4–9 mm wide. Bases of culms usually bulbous. Spikelets 6–8 mm long. Panicle spike-like, 40–130 mm long; lower glume 1-nerved; lower lemma $\pm$ 5 mm long, pale to light brown, usually sparsely hairy. *Flowering December to April*. Usually in moist places such as stream-sides and on grassy mountainsides, extending to forest margins. *Smook* 4808.

W S C N E

Aristida L. (s. Afr.: 26 spp.) 9902620

Smook. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 45–55.

adscensionis L.

(= *A. curvata* (Nees) T. Durand & Schinz,
= *A. submucronata* Schumacher.)

Annual, tufted (erect, often branched), up to 1 m high. Leaf blades up to 300 mm long, up to 3 mm wide. Spikelets 10–40 mm long (including awns). Inflorescence narrowly oblong to lanceolate, 10–50 mm wide, usually spike-like, interrupted at base, with side branches appressed to main axis, sometimes branches open and spreading, with spikelets densely clustered on branches; lower glume two-thirds to three-quarters the length of upper glume, sometimes with a mucro or short awn to 0.8 mm long, lemma laterally compressed, articulation and column absent; awns 3, laterals well developed, shorter than central awn; callus with

rounded, naked tip. *Flowering December to September*. Stony, sandy loam, clayey, calcareous, shallow soils on stony hills, moist areas along pans and rivers, along roads and other disturbed ground. *Oakes & Scheepers* 263.

W S C N E

aequilumis Hack.

Stout and shortly rhizomatous and tufted (densely), up to 0.8 m high. Leaf blades up to 150 mm long, up to 1 mm wide. Spikelets 20–35 mm long (including awns). Culms usually unbranched; leaves mainly basal, forming a dense basal tuft, enclosing culms for most of its length. Inflorescence contracted, dense, much-branched, branches not spreading more than 45° from main axis; glumes equal to subequal, often pubescent, lower glume mucronate; lemma narrowly lanceolate, tapering upwards, articulation absent; column long and twisted; awns 3, laterals shorter but well developed; callus tip naked, truncate to slightly emarginate. *Flowering December to May*. Sandy, shallow soils on rocky hillsides or in seasonally flooded areas. *Smook* 1435.

W S C N E

bipartita (Nees) Trin. & Rupr.

Perennial (to subperennial), tufted (erect or geniculate), up to 0.65 m high. Leaf blades up to 200 mm long, up to 2 mm wide. Spikelets 18–20 mm long (including awns). Inflorescence open, branches rigid, naked for most of their length, spreading at 90° from main axis, spikelets borne at tips of long, naked branches; lower glume equalling or longer than upper glume, awned; lemma articulation and column absent; awns 3, subequal; callus tip thickened, naked, rounded to obtuse. *Flowering October to May*. Sandy, stony, loamy, clayey and black turf soils in moist areas around vleis and dongas, and in overgrazed and other disturbed ground. *Scheepers* 1574.

W S C N E

canescens Henrard subsp. **canescens**

Slender perennial, tufted (erect), up to 1.5 m high. Leaf blades up to 300 mm long, up to 2 mm wide, flat or rolled, curved to curled. Spikelets up to 22 mm long (including awns). Culms 1.5–3.0 mm in diameter, unbranched to sparsely branched from upper nodes; spikelets congested on inflorescence branches; lower glume firm except for the very tip, which is membranous, half as long as to nearly equalling upper glume, without mucro or awn; lemma articulation and column absent; awns 3; callus tip naked, subobtusely rounded. *Flowering December to May*. Shallow, sandy, stony soils on rocky ridges, eroded and disturbed ground. *Acocks* 12385.

W S C N E

congesta Roem. & Schult. subsp. **congesta**

(= *A. alopecuroides* Hack.,
= *A. longicauda* Hack. & Henriq.)

Slender perennial or annual (occasionally), densely tufted, up to 0.9 m high. Leaf blades up to 300 mm long, up to 5 mm wide. Spikelets 25–30 mm long (including

awns). Inflorescence very dense, branches closely appressed, enclosing main axis except occasionally at base where 1 or 2 subspicate side branches spread away from main axis; spikelet clusters narrowly obovate to obovate; lower glume awned; lemma articulation between apex of column and branching point of awns, articulation sometimes represented only by a swollen line or a colour differentiation; column present; awns 3, laterals well developed; callus tip naked, narrowly to broadly rounded to truncate. *Flowering December to May*. Hard or stony loam, sandy basalt, black clayey soils, Kalahari sands on stony slopes, open eroded places, old lands, road verges and other disturbed ground. *Smook 4759*.

W	S	C	N	E
---	---	---	---	---

congesta Roem. & Schult. subsp. **barbicollis** (Trin. & Rupr.) De Winter
(= *A. barbicollis* Trin. & Rupr.)

Perennial, or annual (slender), tufted, up to 0,75 m high. Leaf blades up to 200 mm long, up to 3 mm wide. Spikelets 20–30(–50) mm long (including awns). Inflorescence variable, with many side branches spreading from and exposing main axis, either with a few spikelets laxly clustered or with many spikelets densely clustered at ends of long, naked side branches or spreading to base of side branches; spikelet clusters narrow, obovate to ovate (including awns), longest pedicel to 1,5 mm long; lower glume awned; lemma articulation between apex of column and branching point of awns, articulation sometimes represented only by a swollen line or colour differentiation; column present; awns 3, laterals well developed; callus 0,5–1,5 mm long, tip naked, narrow or broadly rounded to truncate. *Flowering October to May*. Deep, sandy clayey soils on rocky hillsides, old lands and disturbed ground. *Smook 7058*.

W	S	C	N	E
---	---	---	---	---

diffusa Trin. subsp. **burkei** (Stapf) Melderis
(= *A. diffusa* Trin. var. *burkei* (Stapf) Schweick.)

Slender perennial, densely tufted, up to 1 m high. Leaf blades up to 300 mm long, up to 2 mm wide. Culms 1,5–3,0 mm in diameter, unbranched or sparsely branched; leaf auricles glabrous or short-hairy, not woolly. Spikelets 25–40 mm long (including awns). Inflorescence open, with spikelets distant from one another; lower glume obtuse, occasionally coarsely fimbriate at apex, half to two-thirds the length of upper glume, mucro or awn absent; upper glume to 12 mm long; lemma articulation present between apex of lemma and base of column, or absent; column present; callus tip naked, deeply bifid. *Flowering November to April*. Dry, sandy, gravelly loam soils on hilly slopes. *Ellis 2088*.

W	S	C	N	E
---	---	---	---	---

effusa Henrard

Annual, tufted (branched, erect), up to 0,9 m high. Leaf blades up to 300 mm long, up to 3 mm wide. Spikelets 25–32 mm long (including awns). Inflorescence open, ovate, spikelets clustered at end of lax, flexible

branches; lower glume two-thirds as long as to longer than upper glume, narrowed abruptly into a short, acute apex, mucro or awn absent; lemma usually scabrid except for lower quarter, articulation absent; column or beak absent, awns 3, laterals shorter; callus tip naked, swollen, rounded. *Flowering February to May*. Calcareous, sandy loam, stony soils along roadsides. *Smook 7407*.

W	S	C	N	E
---	---	---	---	---

junciformis Trin. & Rupr. subsp. **junciformis**

Perennial, stoutly rhizomatous and tufted (densely, erect), up to 0,9 m high. Leaf blades up to 300 mm long, 3 mm wide, leaves mainly cauline or at least not densely basal. Culms unbranched to branched at some nodes, culms always clearly visible for most of their lengths. Spikelets 20–30 mm long (including awns). Inflorescence contracted, dense to lax, branches erect to spreading up to 45° from main axis. Lower glume up to two-thirds the length of upper, awned. Lemma narrowly lanceolate, distinctly tapering into a beak or column, articulation absent; awns 3, laterals well developed; callus tip naked, swollen, rounded to truncate. *Flowering November to May*. Sandy, clayey, stony soils or shallow soils on stony hillsides, in depressions where water collects and in other damp places, along roadsides and other disturbed ground. *Strey & Schlieben 8524, De Winter 735*.

W	S	C	N	E
---	---	---	---	---

junciformis Trin. & Rupr. subsp. **galpinii** (Stapf) De Winter
(= *A. galpinii* Stapf)

Perennial, long, oblique, thinly rhizomatous and tufted (densely, erect), up to 500 mm tall. Leaf blades up to 250 mm long, up to 1 mm wide, leaves mainly basal, forming a dense basal tuft in which culms remain hidden. Culms mainly unbranched at upper nodes. Spikelets 15–30 mm long (including awns). Inflorescence contracted, branches erect or spreading but not more than 45° from main axis. Glumes usually very unequal, lower glume half to two-thirds the length of the upper, mucronate to shortly awned. Lemma narrowly lanceolate, articulation absent, distinctly tapering towards a short beak or very short column. Awns 3, laterals well developed. Callus tip naked, truncate or broadly rounded. *Flowering November to April*. Shallow soils and overgrazed areas on basalt or sandstone, rocky slopes of very high mountains. *Huntley 1445*.

W	S	C	N	E
---	---	---	---	---

meridionalis Henrard

Perennial, densely tufted, up to 2 m high. Leaf blades up to 650 mm long, up to 5 mm wide, leaves flexible, some leaf auricles with long woolly hairs. Lower culm internodes glabrous or pubescent to woolly-hairy. Spikelets 35–50 mm long (including awns). Inflorescence oblong to broadly oblong, symmetrical, large, up to 800 mm long and over 200 mm wide, much-branched; lower glume less than two-thirds the length of the upper; lemma articulation between apex of lemma and base of column; column 8–20 mm long;

awns 3, subequal; callus tip naked, deeply bifid. *Flowering November to May*. Deep sandy to stony soils in open areas, along roadsides and in moist areas around vleis and damp depressions. *Theron 1208*.

W S C N E

mollissima Pilg. subsp. **mollissima**

Perennial, densely tufted (erect), up to 0,85 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Lower internodes of culms woolly to densely tomentose. Spikelets 50–95 mm long (including awns). Inflorescence contracted, spike-like, very dense; lower glume up to two-thirds the length of the upper, awned; lemma articulation between apex of lemma and base of column; column 16–30 mm long; awns 3, subequal; callus 1,5–3,0 mm long, tip naked, acuminate, pungent. *Flowering December to May*. Deep sandy soils especially red Kalahari sands. *Schweickerdt 1465*.

W S C N E

mollissima Pilg. subsp. **argentea** (Schweick.) Melderis
(= *A. argentea* Schweick.)

Perennial, densely tufted (erect to geniculate), up to 1 m high. Leaf blades up to 400 mm long, up to 4 mm wide. Lower internodes of culms woolly to densely tomentose. Spikelets 50–90 mm long (including awns). Inflorescence narrow, lax, ± divaricately branched; lower glume up to two-thirds the length of the upper, awned; lemma articulation between apex of lemma and base of column; column 13–30 mm long, twisted; awns 3, slightly unequal to subequal; callus 1,5–3,0 mm long, tip naked, acuminate, pungent. *Flowering December to March*. Light, sandy to stony sandy soils in open areas, on mountainsides or disturbed areas. *Ellis 3211*.

W S C N E

pilgeri Henrard

Robust and coarse perennial, densely tufted, up to 1,5 m high. Leaf blades up to 500 mm long; 0,9–4,5 mm wide. Lower internodes glabrous. Spikelets 10–26 mm long (including awns). Inflorescence with spikelet clusters linear to oblanceolate (including awns), longest pedicel to 8,5 mm long; lower glume half to two-thirds the length of the upper, long-awned; lemma articulation between apex of lemma and branching point of awns, sometimes articulation represented only by a swollen line or colour differentiation; column distinct, up to 2,5 mm long; awns 3, slightly unequal; callus 0,5–1,5 mm long, tip naked, broadly rounded. *Flowering February to July*. Calcareous or sandy, stony soils in moist depressions, along edges of floodplains, on riverbanks. *Mogg sub PRE 58060*.

W S C N E

recta Franch.

Perennial, occasionally shortly rhizomatous and tufted (erect), up to 500 mm tall (usually shorter). Leaf blades up to 200 mm long, up to 1 mm wide. Basal leaf sheaths persistent, breaking up into fibres and forming a dense tuft at base of culms. Spikelets 10–12 mm long (including awns). Inflorescence contracted, branches erect or spreading less than 45° from main axis; spikelets

brownish purple to deep purple; lower glume up to two-thirds the length of the upper, awned; lemma articulation absent; column absent, sometimes with a short beak; awns 3, subequal; callus very short, tip naked, large, swollen, rounded. *Flowering September to November*. Damp ground around vleis, and seepage areas, usually on slopes of sour mountain grassland. *Kluge 1982*.

W S C N E

rhinichloa Hochst.

(= *A. andoniensis* Henrard)

Annual, tufted (erect), up to 0,9 m high, scabrid, occasionally smooth. Leaf blades up to 200 mm long, up to 4 mm wide. Spikelets 35–50 mm long (including awns), coarse; lower glume usually slightly longer than upper glume, awn 0,8–3,5 mm long; lemma linear, laterally compressed, articulation absent; column absent; awns 3, laterals well developed; callus tip naked, broad, swollen, rounded. *Flowering January to May*. Sand to sandy loam, stony to heavier soils, sometimes over calcareous outcrops on dry ground along rocky slopes, gravel plains and eroded areas. *Smook 4221*.

W S C N E

scabrivalvis Hack. subsp. **scabrivalvis**

Annual, tufted (erect to geniculate), up to 0,85 m high. Leaf blades up to 200 mm long, up to 3,5 mm wide. Spikelets 18–24 mm long (including awns). Inflorescence delicate, branchlets and pedicels spreading, with a few spikelets distant from one another at ends of branches; lower glume shorter than three-quarters the length of the upper (excluding awns), awn 0,8–3,5 mm long; lemma linear, laterally compressed, articulation absent; column absent; awns 3, laterals well developed; callus tip naked, swollen, rounded. *Flowering January to May*. Sandy, sandy loam, clays, often over limestone, usually in disturbed places such as roadsides and old lands. *Smook 4375*.

W S C N E

scabrivalvis Hack. subsp. **contracta** (De Winter)
Melderis

Annual, tufted (erect to geniculate), up to 0,85 m high. Leaf blades up to 300 mm long, up to 3,2 mm wide. Spikelets 10–25 mm long (including awns), slender and fine. Inflorescence robust, branchlets and pedicels appressed, with spikelets densely congested at ends of branches; lower glume shorter than three-quarters the length of the upper (excluding awns), awn 0,8–3,5 mm long; lemma linear, laterally compressed, articulation absent; column absent; awns 3, laterals well developed; callus tip naked, swollen, rounded. *Flowering March to May*. Shale, heavy basalt or sandy soils in open and disturbed places on roadsides and hillsides. *Ellis 524*, *Smook 4236*.

W S C N E

sciurus Stapf

Robust perennial, short rhizomatous and tufted (erect), up to 1,4 m high. Leaf blades up to 800 mm long; 2–3(–6) mm wide. Culms 5–6 mm in diameter, un-

branched, lower internodes woolly-hairy or glabrous. Spikelets 25–30 mm long (including awns); lower glume half the length of the upper, mucro or awn absent; lemma articulation absent; lemma narrowed into a beak or very short twisted column; awns 3, subequal; callus tip small, naked, swollen and rounded. *Flowering January to May*. Moist sandy soils mainly in mountain sourveld. *Turner 133*.

W S C N E

spectabilis Hack.

Perennial, densely tufted, up to 1,75 m high. Leaf blades up to 600 mm long; 4–5 mm wide. Spikelets 35–40 mm long (including awns); lower glume half the length to nearly as long as the upper, firm below, upper third to two-thirds membranous and often torn, mucro or awn absent; lemma articulation present between apex of lemma and base of column; column 4–6 mm long, twisted; awns 3, equal to subequal; callus tip naked, emarginate to distinctly bifid. *Flowering February to April*. Shallow and sandy soils mainly derived from quartzite on stony, rocky mountainsides. *Louw 1390*.

W S C N E

stipitata Hack. subsp. stipitata

Robust perennial, tufted (erect), up to 1,5 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Culms sparsely branched at upper nodes, lower internodes glabrous or pubescent, not woolly-hairy. Spikelets 50–90 mm long (including awns). Inflorescence narrow, 150–300 mm long, dense, spike-like, branches closely appressed to main axis, sometimes interrupted towards base; lower glume up to two-thirds the length of the upper, awned; lemma articulation between apex of lemma and base of column; column present; awns 3, laterals well developed; callus 1,5–3,0 mm long, tip naked, acuminate, pungent. *Flowering December to April*. Deep sandy or calcareous soils. *Smook 4310, De Winter 2280*.

W S C N E

stipitata Hack. subsp. graciliflora (Pilg.) Melderis

(= *A. graciliflora* Pilg.,

= *A. stipitata* Hack. var. *graciliflora* (Pilg.) De Winter)

Slender perennial, loosely tufted (erect), up to 0,9 m high. Leaf blades up to 200 mm long, 2–3 mm wide. Culms 1,0–2,5 mm in diameter, lower internodes glabrous or pubescent, not woolly-hairy. Spikelets 60–80 mm long (including awns). Inflorescence narrow, not spike-like, sparse, branches lax, not closely appressed to main axis; lower glume up to two-thirds the length of the upper, awned; lemma articulation between apex of lemma and base of column; column present; awns 3, laterals well developed; callus 1,5–3,0 mm long, tip naked, acuminate, pungent. *Flowering November to June*. Sandy or loamy soils in rocky situations, seepage zones and disturbed ground. *Ellery 344*.

W S C N E

stipitata Hack. subsp. spicata (De Winter) Melderis

Slender perennial; loosely to densely tufted (erect); up to 0,6 m high. Leaf blades up to 150 mm long. Culms

much-branched at upper nodes, lower internodes glabrous or pubescent, not woolly-hairy. Spikelets 50–100 mm long (including awns). Inflorescence narrow, dense, spike-like, branches closely appressed to main axis, sometimes interrupted towards base, usually up to 150 mm long; lower glume up to two-thirds the length of the upper, awned; lemma articulation between apex of lemma and base of column; column well developed; awns 3, laterals well developed; callus 1,5–3,0 mm long, tip naked, acuminate, pungent. *Flowering February to May*. Deep sandy soils associated with rocky outcrops. *Koekemoer 241*.

W S C N E

transvaalensis Henrard

Perennial, densely tufted, up to 0,7 m high, branched at all upper nodes. Leaf blades up to 150 mm long. Spikelets 15–30 mm long (including awns); lower glume (including awns) two-thirds the length of the upper, awned; lemma without articulation; column of variable length; central awn sometimes solitary, lateral awns absent or weakly developed being very much shorter and more slender; callus tip naked, swollen, obtuse to truncate. *Flowering December to May*. Shallow soils in crevices and pockets on dry rocky outcrops and hillsides. *Smook 3056*.

W S C N E

vestita Thunb.

Perennial, densely tufted, up to 0,85 m high. Leaf blades up to 240 mm long, up to 4 mm wide. Lower culm internodes pubescent to woolly-hairy, upper internodes pubescent to glabrous. Spikelets 30–50 mm long (including awns). Inflorescence narrowly oblong to narrowly elliptic, usually asymmetric, up to 200 mm long and 120 mm wide; lower glume up to two-thirds the length of the upper, awn or mucro absent; lemma articulation between lemma apex and base of column; column 5–7 mm long; awns 3, laterals well developed; callus tip naked, distinctly bifid. *Flowering sporadically, but mostly November to May*. Dry sandy loam or black clay, limestone soils in stony and rocky veld. *Kinges 1549*.

W S C N E

Arthraxon P. Beauv. (s. Afr.: 1 sp.) 9900670

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 56.

lanceolatus (Roxb.) Hochst. var. lanceolatus

(= *A. prionodes* (Steud.) Dandy)

Perennial, trailing, up to 0,6 m high. Leaf blades 20–70 mm long, 4–20 mm wide (margins with tubercle-based hairs). Spikelets (sessile) 5,0–6,5 mm long (pedicellate shorter); lower glume spiny on keels; female-fertile lemma awned from near base. *Flowering October to April*. Riverbanks. *Stevenson-Hamilton sub PRE 39009*.

W S C N E

Arundinella Raddi (s. Afr.: 1 sp.) 9901730

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 56–57.

nepalensis Trin.

Perennial, tufted, up to 1,5 m high. Rhizome creeping, often covered with short scale-like leaves, resulting in a plaited look. Leaf blades 80–300 mm long, 3–10 mm wide. Spikelets 4–6 mm long. Panicle dense, 120–300 mm long, spikelets usually in pairs, brown, sometimes tinged with green or purple; glumes unequal and acute; lower lemma with a truncate, hairy callus, awns 3–6 mm long. *Flowering December to March*. Vleis, riverbanks and moist grasslands. *Smook 4999*.

W	S	C	N	E
---	---	---	---	---

Arundo L. (s. Afr.: 1 sp.) 9902130

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 57–58.

donax L.*

Perennial, rhizomatous, up to 3 m high, robust, not tufted. Leaf blades up to 0,7 m long, up to 80 mm wide, leaves deciduous at base of blade, blades rounded or caudate at base, tips not sharp; ligule with fringing hairs shorter than membranous base. Spikelets 8–15 mm long. Inflorescence 0,3–0,6 m long, compact with ascending branches; lemmas with long hairs on back. *Flowering February or April*. Moist disturbed places. Native of the warm regions of the Old World. *Smook 439*.

W	S	C	N	E
---	---	---	---	---

Avena L. (s. Afr.: 5 spp.) 9901950

Sokutu. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 58–59.

fatua L.*

Annual, culms solitary or loosely tufted, up to 0,7 m high. Leaf blades 50–280 mm long, 3–8 mm wide. Spikelets 18–32 mm long, usually brownish, especially on hairs; lemma apices with teeth usually 1,0–1,5 mm long. *Flowering August to November*. Disturbed and waste places, roadsides on sandy soil. Native to Europe. *Behr 828*.

W	S	C	N	E
---	---	---	---	---

sativa L.*

Annual, culms solitary or loosely tufted, up to 1,5 m high. Leaf blades 100–400 mm long, 3–9 mm wide. Spikelets 17–35 mm long; lemma sparsely hairy or glabrous, apices emarginate; awn with a distinct column, almost straight, sometimes absent. *Flowering September to November*. Waste places, disturbed areas, roadsides. Native to Europe. *Turner 204*.

W	S	C	N	E
---	---	---	---	---

Axonopus P. Beauv. (s. Afr.: 1 sp.) 9901050

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 59–60.

affinis Chase*

Perennial, stoloniferous, up to 0,6 m high, strongly stoloniferous, forming dense swards. Culm nodes glabrous. Leaf blades up to 200 mm long, 8 mm wide, rounded at tip. Spikelets 2 mm long, 1 mm wide; female-fertile (upper) lemma as long as spikelet. *Flowering December to May*. Moist and disturbed ground. Native to tropical America. *Ellis 4467*.

W	S	C	N	E
---	---	---	---	---

Bambusa Schreb. (s. Afr.: 1 sp.) 9904710

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 60–61.

balcooa Roxb. ex Roxb.*

Rhizomatous, 15–21 m high, growing in dense clumps, culms arching gracefully at top. Leaf blades up to 150 mm long, up to 40 mm wide. Spikelets 7–16 mm long. *Flowering rare and sporadic*. Streambanks and forest margins. Native to India. *Henderson 636*.

W	S	C	N	E
---	---	---	---	---

Bewisia Gooss. (s. Afr.: 1 sp.) 9903442

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 61.

biflora (Hack.) Gooss.

(= *Diplachne biflora* Hack. ex Schinz)

Perennial, shortly rhizomatous and tufted, up to 0,93 m high. Leaf blades 100–400 mm long, 1–5 mm wide. Spikelets 5,5–9,0 mm long, 2–4-flowered; lemma dorsally awned; awn 1–8 mm long, arising 1–2 mm from tip. *Flowering November to April*. Rocky hillsides or plains, mixed bushveld to open flats. *Smook 4856*.

W	S	C	N	E
---	---	---	---	---

Bothriochloa Kuntze (s. Afr.: 3 spp.) 9900630

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 62–63.

bladhii (Retz.) S.T. Blake

(= *B. glabra* (Roxb.) A. Camus,

= *B. insculpta* (A. Rich.) A. Camus var. *vegetior* (Hack.) C.E. Hubb.)

Perennial, tufted, up to 1,8 m high. Leaf blades 100–550 mm long, 2–12 mm wide. Spikelets (sessile) 3–4 mm long. Inflorescence axis longer than racemes; racemes more than 20, pedicel and callus hairs usually shorter than 1 mm; lower glumes pitted. *Flowering December to June*. Riverbanks and vleis. *Smook 2650*.

W	S	C	N	E
---	---	---	---	---

insculpta (A. Rich.) A. Camus

(= *B. pertusa* auctt., non (L.) A. Camus)

Perennial, sometimes stoloniferous, up to 1,5 m high. Leaf blades 40–300 mm long, 2–8 mm wide. Spikelets (sessile) 4,5–5,0 mm long. Inflorescence axis shorter than racemes; racemes 3–20, pedicel callus hairs 1–3 mm long; lower glumes pitted. *Flowering October to June*. Grassland and hillsides, often in overgrazed places. *Liengme* 556.

W S C N E

radicans (Lehm.) A. Camus

Perennial, often stoloniferous, up to 0,7 m high. Leaf blades 60–200 mm long, 2–6 mm wide. Spikelets (sessile) 3–5 mm long. Inflorescence axes shorter than racemes, racemes 5–16, lower glume of sessile spikelets sparsely hairy, glumes not pitted. *Flowering October to April*. Rocky hillsides. *Smook* 4369.

W S C N E

Brachiaria (Trin.) Griseb. (s. Afr.:

19 spp.)

9901040

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 63–68.

advena Vickery

Perennial or annual, very loosely tufted, or stoloniferous (occasionally), up to 0,8 m high. Leaf blades 50–130 mm long, 2–6 mm wide. Culms erect or decumbent and rooting at nodes, sometimes straggly. Spikelets 3,0–3,8 mm long. Panicle simple; racemes secund, 10–30 mm long; spikelets arranged in 2 rows, sparsely pilose, distinctly flattened on inner side, pedicels equal. *Flowering December to March*. Usually in damp, disturbed areas on black clayey soil, often in meale or sunflower fields. *Liebenberg* 8591.

W S C N E

arrecta (T. Durand & Schinz) Stent

(= *B. laifolia* Stapf)

Perennial, hydrophyte or stoloniferous or tufted (prostrate and rooting at nodes), up to 1,3 m high. Leaf blades 50–250 mm long, 5–15 mm wide. Spikelets 3,0–4,3 mm long. Racemes secund, 10–50 mm long; rachis flat and ribbon-like, broadly winged, 1,0–1,9 mm wide; spikelets glabrous, arranged in 2 rows, pedicels equal; lower glume 1-nerved, less than half spikelet length. *Flowering December to June*. In shallow water of river floodplains or vleis, but also extending to areas around rivers and lakes, often in shade and usually on wet soils. *Bott & Bell sub PRE* 3401.

W S C N E

bovonei (Chiov.) Robyns

Perennial, densely tufted, up to 1 m high. Leaf blades 30–300 mm long, 3–6 mm wide, flat or sometimes convolute, usually much less than half the length of culms, usually hairy. Spikelets 3,2–4,5 mm long. Racemes secund, 10–30(–50) mm long; spikelets ar-

ranged in 2 rows, pedicels equal; lower glume two-thirds the spikelet length, 7-nerved; cross-veins present on upper glume and lower lemma. *Flowering October to January*. In wet, marshy or damp areas around vleis, dams or streams in open veld or on mountainsides, usually on sandy soils. *Liebenberg* 2805.

W S C N E

brizantha (A. Rich.) Stapf

Perennial, loosely tufted (often robust), up to 2 m high. Leaf blades 100–400 mm long, 7–20 mm wide. Spikelets 4–6 mm long. Racemes secund, 25–100 mm long; spikelets arranged in a single row or occasionally with 2 rows near base, pedicels equal; lower glume 7-nerved, less than half the spikelet length, separated from upper glume by a short internode. *Flowering October to May*. Prefers undisturbed areas near streams, especially under trees in open woodland, usually in sandy or rich soils. *Smook* 3064.

W S C N E

deflexa (Schumach.) C.E. Hubb. ex Robyns

(= *Pseudobrachiaria deflexa* (Schumach.) Launert)

Annual, loosely tufted (culms often weak and ascending, solitary or branched), up to 0,7 m high. Leaf blades 40–180(–250) mm long, 4–22 mm wide. Spikelets 2,0–3,4 mm long. Panicle broadly ovate, branches rigid, simple or compound; racemes 7–15, 20–100 mm long, pedicels unequal, the longer one up to 15 mm long; upper lemma finely rugose. *Flowering December to June*. Shady places in open woodland or forest margins, often ruderal in disturbed areas. *Ellis* 1879.

W S C N E

dictyoneura (Figert & De Not.) Stapf

Perennial, densely tufted and rhizomatous, up to 1,2 m high. Leaf blades 50–300 mm long, 3–10(–30) mm wide. Spikelets 5–7 mm long. Racemes 4–12, secund, 10–80 mm long; spikelets arranged in 2 rows, pedicels equal; lower glume more than two-thirds the spikelet length, 7–9-nerved, separated from upper glume by a short internode; upper glume and lower lemma with cross veins between nerves. *Flowering November to March*. Usually in bush or mixed mopane veld or along roadsides in damp ditches. *Van der Schijff* 1510.

W S C N E

eruciformis (Sm.) Griseb.

Annual, loosely tufted (sometimes straggly or procumbent), up to 500 mm tall. Leaf blades 20–150 mm long, 2–6 mm wide. Culms erect or decumbent and rooting at nodes. Spikelets 1,7–2,7 mm long. Racemes secund, 10–25(–30) mm long; spikelets sparsely pilose, arranged in 2 rows, pedicels equal. *Flowering November to May*. In moist places on clay or black turf and in disturbed areas. *Ellis* 3863.

W S C N E

grossa Stapf

Annual, tufted (with few basal leaves), up to 1 m high. Leaf blades 50–300 mm long, 4–15(–20) mm wide,

oblique and rounded at base. Spikelets 3.0–4.2 mm long. Panicle broadly ovate; racemes 5–12, rigid, 30–100 mm long; spikelets spaced, appearing loosely continuous; pedicels of unequal lengths; upper lemma coarsely rugose. *Flowering January to April*. In sandy pockets of soil on granite outcrops or on rocky mountainsides, also around pans or rivers, occasionally in shade. *Smook 5321*.

W S C N E

humidicola (Rendle) Schweick.

Stoloniferous (culms procumbent except for flowering parts), up to 1.1 m high. Leaf blades 40–250 mm long, 3–16 mm wide. Spikelets 4.5–6.0 mm long. Racemes 1–4, widely spaced, secund, 25–55 mm long; spikelets in 1 or 2 rows, pedicels equal; lower glume more than two-thirds the spikelet length, 7-nerved, separated from upper glume by a short internode; upper glume and lower lemma with cross-veins between nerves. *Flowering December to May*. Favours wet areas such as vlei edges or seasonally swampy grassland but also extends into woodlands, usually on sandy soils. *Codd 6890*.

W S C N E

marlothii (Hack.) Stent

Usually annual, stoloniferous or tufted (decumbent and rooting from lower nodes), up to 500 mm tall. Leaf blades 10–140 mm long, 1–5 mm wide. Spikelets 2.0–2.5 mm long. Racemes secund, 25–50 mm long; spikelets arranged in 4 rows, sparsely hairy on nerves, with very distinct tufts of hairs in upper half on either side of upper glume and lower lemma; pedicels equal. *Flowering December to May*. Most frequently in disturbed or heavily grazed areas on shallow sand or loam near dams or in seasonally moist spots. *Smook 6262*.

W S C N E

nigropedata (Ficalho & Hiern) Stapf

Perennial, densely tufted and rhizomatous (rhizome long and creeping), up to 1.2 m high. Leaf blades up to 300 mm long, 5–9 mm wide. Spikelets 3–4 mm long. Racemes secund, 15–30(–40) mm long; spikelets in 2 rows, pedicels equal; lower glume acuminate but very variable in the same inflorescence, distinctly darker coloured at base and clasping short internode between the two glumes; upper glume and lower lemma also acuminate. *Flowering November to April*. Open veld or bush on rocky slopes or among rocks, usually on sandy or well-drained soils. *Coetzee 1040*.

W S C N E

serrata (Thunb.) Stapf

(= *B. serrata* (Thunb.) Stapf var. *serrata*,
= *B. serrata* (Thunb.) Stapf var. *gossypina* (A. Rich.) Stapf)

Perennial, tufted (densely or loosely) or rhizomatous, up to 0.75 m high. Vegetative parts very variable; leaves sometimes in a dense tuft at base or cauline, leaving base bare; culms single or profusely branched. Leaf blades 50–250 mm long, 2–10 mm

wide. Spikelets 2.3–4.5 mm long. Racemes secund, 10–25 mm long; spikelets with dense, long, silky, white or purple hairs concentrated at apex; pedicels equal; lower lemma and palea extending into a short stout mucro up to 1 mm long. *Flowering October to May*. On shallow sandy soil, usually in rocky areas or on mountainsides but extending into open bush, grassland and occasionally to edges of vleis. *Smook 4849*.

W S C N E

subulifolia (Mez) Clayton

(= *B. filifolia* Stapf)

Perennial. Rhizomatous (rhizome oblique) or tufted (erect), up to 1 m high. Leaf blades filiform, 50–200 mm long, 0.7–1.0 mm wide, usually up to half the length of culms, usually glabrous. Spikelets 2.8–4.0 mm long. Racemes secund, 10–30 mm long; spikelets arranged in 2 rows; pedicels equal; lower glume two-thirds the spikelet length, 7-nerved, cross-veins present on upper glume and lower lemma. *Flowering September to November*. Frequently in damp or seepage areas on sandy soils. *De Winter & Codd 164*.

W S C N E

xantholeuca (Schinz) Stapf

Annual, tufted (culms decumbent and branching at lower nodes), up to 0.6 m high. Leaf blades 30–150 mm long, 4–10 mm wide, broadly linear to narrowly lanceolate, velvety pubescent. Spikelets 2.7–4.0 mm long. Racemes secund, 20–70 mm long; spikelets arranged in 2 rows; pedicels equal; lower glume 3-nerved, half the spikelet length. *Flowering November to March*. Among trees, usually near water in sandy loam or clayey soils, often in overgrazed and disturbed places. *Smook 4778*.

W S C N E

Brachypodium P. Beauv. (s. Afr.: 3 spp.)

9904320

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 70–71.

flexum Nees

Perennial, culms straggling, slender, wiry, sometimes decumbent and rooting at lower nodes, up to 0.9 m high. Leaf blades 50–170 mm long, 2–8 mm wide, leaves mainly cauline, linear. Spikelets 12–44 mm long. Racemes 60–120 mm long, usually flexuous, with (3–) 5–9 spikelets spread along rhachis; lemma awn 4–8 mm long. *Flowering October to April*. In moist shady places of forests, usually near streams, occasionally in thickets and bushland. *Devenish 1104*.

W S C N E

Briza L. (s. Afr.: 3 spp.)

9904040

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 72–73.

maxima L.*

Annual, loosely tufted (culms erect, simple or branched), up to 0,6 m high. Leaf blades 70–250 mm long, 3–8 mm wide. Spikelets 8–25 mm long, 8–15 mm wide. Panicle open, branches single or in fascicles of 2–4; spikelets 3–12, longer than wide, 7–20-flowered, nodding, solitary at tips of slender branches; glumes green, brown or purple, 5–9-nerved; lemmas straw-coloured, sometimes variegated with purple. *Flowering July to December*. Mostly on well-drained soils in disturbed areas, especially on roadsides or on margins of irrigated lands, cultivated in gardens. Native to Mediterranean region. *Loubser 1413*.

W S C N E

minor L.*

Annual, loosely tufted (culms soft with dark nodes, often branched near base), up to 0,6 m high. Leaf blades 40–220 mm long, 3–9 mm wide. Spikelets 3–5 mm long, 3–6 mm wide. Panicle open, spreading, branches single or in fascicles of 2–4; spikelets numerous, almost as wide as or slightly wider than long, 3–8-flowered; glumes 3–5-nerved; glumes and lemmas green or tinged with purple, margins distinctly lighter in colour. *Flowering September to December*. Usually found in moist shady and disturbed places around streams and vleis on loam or clayey soils. Native to Mediterranean region. *Behr 574*.

W S C N E

Bromus L. (s. Afr.: 15 spp.) 9904280

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 73–76.

catharticus Vahl*

(= *B. unioloides* Humb. & Kunth,
= *B. willdenowii* Kunth)

Short-lived perennial or annual, tufted, up to 1 m high. Leaf blades 5–8 mm wide. Spikelets 20–35 mm long, 5–8 mm wide. Panicle lax, pedicels longer than spikelets; spikelets compressed; glumes and lemmas prominently keeled, acute; glumes 3–9-nerved; lemmas 15–25 mm long, minutely bifid, lobes shorter than 0,5 mm, awns shorter than 3 mm. *Flowering October to April*. Usually in moist to wet places, often in shade, in disturbed and natural veld. Different strains from Europe, Australia and America. *Dryhout 773*.

W S C N E

hordeaceus L. subsp. molliformis (J. Lloyd) Maire & Weiller

(= *B. molliformis* J. Lloyd)

Annual, tufted, up to 0,6 m high. Panicle contracted, often elliptical, pedicels pilose to villous, shorter than spikelets; spikelets densely villous; lower glume 3–5-nerved, upper 7-nerved; lemmas 6–9 mm long, awns 3–7 mm long, scabrid, erect or somewhat spreading. *Flowering October to February*. Cultivated lands, embankments and other disturbed areas. Naturalized. *Devenish 1567*.

W S C N E

inermis Leyss.*

Perennial, rhizomatous, up to 1 m high. Leaf blades 200–500 mm long, 4–7 mm wide. Spikelets 10–20 mm long. Panicle open, pedicels glabrous to scabrid; spikelets narrowly oblong; lower glume 1-nerved, upper 3-nerved; lemmas 6,0–8,5 mm long, awns fine, up to 1 mm long. *Flowering November to April*. Disturbed or weedy places. Native to Europe. *Van Wyk 36*.

W S C N E

leptoclados Nees

Perennial, tufted, up to 1,5 m high. Leaf blades 100–300 mm long, 5–13 mm wide. Spikelets 10–30 mm long, 2–6 mm wide. Panicle open, pedicels scabrid; spikelets open or with flowers closely arranged; lower glume 1–3-nerved, upper 3–5-nerved; lemmas 8–12 mm long, awns up to 5 mm long. *Flowering October to February*. Usually in moist, shady places along rivers and streams. *Devenish 1792*.

W S C N E

natalensis Stapf

(= *B. natalensis* Stapf var. *lasiophilus* Stapf,
= *B. speciosus* sensu Compton, non Nees)

Perennial, rhizomatous, up to 1,2 m high. Leaf blades 70–150 mm long, 4–7 mm wide. Spikelets 35–55 mm long, 5–10 mm wide. Panicle open, pedicels sparsely villous to echinate; spikelets glabrous or finely scabrid; lower glume 3-nerved, upper 5–7-nerved; lemmas 15–18 mm long, awns 6–15 mm long. *Flowering October to January*. Rocky hillsides. *Codd 8142*.

W S C N E

pectinatus Thunb.

Annual, tufted, up to 0,8 m high. Leaf blades 50–300 mm long, 2–8 mm wide. Spikelets 10–30 mm long, 3–6 mm wide. Panicle open, pedicels longer than spikelets; spikelets laterally compressed; lower glume 1–3-nerved, upper 5–7-nerved; lemmas 7–14 mm long, tips acute to subacuminate, awns 6–18 mm long. *Flowering August to February*. In disturbed and eroded areas. *Repton 2633*.

W S C N E

Calamagrostis Adans. (s. Afr.: 1 sp.) 9902460

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 76–77.

epigeios (L.) Roth var. capensis Stapf

Erect perennial, tufted and rhizomatous (rhizome creeping), up to 1,2 m high. Leaf blades up to 450 mm long, up to 10 mm wide. Spikelets 5,5–8,0 mm long. Panicle narrow, up to 250 mm long, light brown; florets with conspicuous long white callus hairs. *Flowering January to May*. Vleis. *Codd 2733*.

W S C N E

Catalepis Stapf & Stent (s. Afr.: 1 sp.) 9902942

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 77–78.

gracilis Stapf & Stent

Creeping perennial, rhizomatous and tufted, up to 400 mm tall. Leaf blades 10–150 mm long, 1–2 mm wide, leaves fine and curly with age. Spikelets 4–5 mm long. Panicle spike-like, 15–30 mm long; lower glume reduced to a small scale; upper glume 1-nerved. *Flowering January to March*. Sometimes in shallow sandy soil, but more often on black clay in vleis. *Schweickhardt 1760*.

W	S	C	N	E
---	---	---	---	---

Cenchrus L. (s. Afr.: 4 spp.) 9901400

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 79–80.

biflorus Roxb.*

Annual, tufted, up to 0,8 m high. Leaf blades 60–350 mm long, 4–10 mm wide. Spikelets 5 mm long, 4 mm wide. Inflorescence a false spike 20–100 mm long; spikelet involucre in 2 whorls, inner whorl with connate spines which are plumose on their inner surface and with 1–3 shallow grooves on their outer surface, outer whorl bristle-like and short, 40–60 spines; base of burr with a distinct ovoid disc. *Flowering February to June*. Mainly sandy soil. Native to tropical America. *Van der Merwe sub PRE 33645*.

W	S	C	N	E
---	---	---	---	---

ciliaris L.

Perennial, tufted, up to 1 m high. Leaf blades 100–250 mm long, 4–8 mm wide. Spikelets 4–5 mm long, 3 mm wide. Inflorescence a bristly false spike, 40–120 mm long, straw-coloured or purple; bristles mostly 5–10 mm long, inner bristles slender and plumose, outer bristles slender and scabrid, all bristles joined at base below spikelet cluster to form a small inconspicuous disc. *Flowering August to April*. Common in hot dry areas, especially on sandy soils, widespread elsewhere. *Zwanziger 517*.

W	S	C	N	E
---	---	---	---	---

incertus M.A. Curtis*

(= *C. pauciflorus* Benth.)

Annual, tufted, up to 400 mm tall. Leaf blades 60–120 mm long, 3–4 mm wide. Spikelets 5–7 mm long, 3–4 mm wide. Inflorescence open or compact 20–80 mm long; burrs ovoid to globose with clefts on 2 sides, with 8–40 spines of variable shape and size, inner spines more regular with a plumose inner surface, outer spines connate and spreading in all directions. *Flowering January to March*. Mainly sandy soil. Native to tropical America. *Village Council sub PRE 16412*.

W	S	C	N	E
---	---	---	---	---

Chloris Sw. (s. Afr.: 8 spp.)

9903010

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 82–84.

diluta Renvoize

Perennial, rhizomatous and stoloniferous, up to 1 m high. Leaf blades 100–300 mm long, 4–7 mm wide, acuminate. Culms wiry, usually erect. Spikelets 2,0–2,5 mm long. Spikes 4–6, 50–80 mm long; spikelets ± their own length apart; lower glume 2,0–2,5 mm long; lowest lemma 3,5 mm long, with awn 2–8 mm long. *Flowering March to June*. In scrub forest on riverbanks. *Scheepers 1138*.

W	S	C	N	E
---	---	---	---	---

gayana Kunth*

Perennial, stoloniferous and tufted, up to 1,2 m high. Leaf blades 250–500 mm long, 3–9 mm wide, basal leaf sheaths strongly keeled. Spikelets 3–5 mm long. Spikes 7–20, 40–150 mm long; spikelets overlapping for most of their length; lower glume 1,5–2,5 mm long; lowest lemma 2,5–3,5 mm long, awn 1–10 mm long, shorter than or as long as body of lemma. *Flowering November to May*. Riverine woodland to open veld on well drained soils. Native to India. *Scheepers 941*.

W	S	C	N	E
---	---	---	---	---

mossambicensis K. Schum.

(= *Tetrapogon mossambicensis* (K. Schum.) Chippind. ex Fisher)

Robust perennial, rhizomatous and stoloniferous, up to 0,8 m high. Leaf blades 100–350 mm long, 3–6 mm wide, basal leaf sheaths strongly keeled. Spikelets 2–4 mm long. Spikes usually 4 or 5, yellowish, 30–80 mm long; spikelets coarse; lower glume 1,7–2,0 mm long; upper glume 2,75–3,50(–4,00) mm long; lowest lemma 2–3(–4) mm long, awns two, 4–11 mm long. *Flowering October to April*. Along rivers or on seasonally flooded pans on clayey, waterlogged and turf soils. *Brendenkamp 1525*.

W	S	C	N	E
---	---	---	---	---

pycnothrix Trin.

Usually annual or perennial, tufted, up to 500 mm tall. Leaf blades 20–100 mm long, 3–5 mm wide, leaves with rounded and blunt tips. Spikelets 2–3 mm long. Spikes 4–9, delicate, narrow, 40–100 mm long, horizontally spreading; lower glume 1,5–3,0 mm long; lowest lemma 2,5–3,2 mm long, tips acuminate to acute, awns 11–27 mm long. *Flowering September to May*. In cultivated lands, disturbed areas and on roadsides in shallow stony soils. *Smook 4336*.

W	S	C	N	E
---	---	---	---	---

roxburghiana Schult.

(= *C. myriostachya* Hochst.)

Perennial, rhizomatous and tufted, up to 1,25 m high. Leaf blades 100–400 mm long, 2–10 mm wide. Spikelets 1–3 mm long. Panicle dense, axis 40–100 mm long; spikes numerous, 30–80 mm long; spikelets 3- or 4-flowered; lower glume 1,0–1,5 mm long; upper glume 2,0–2,8 mm long; lowest lemma 1,5–2,0 mm long, awns 8–17 mm long. *Flowering November to*

May. Dry, sandy or stony soil on riverbanks, in open veld or disturbed places. *Ellis 3860*.

W S C N E

virgata Sw.

Usually annual or perennial, tufted, up to 0,75 m high. Leaf blades 100–300 mm long, 2–6 mm wide, upper leaf sheaths inflated. Spikelets 3,0–3,5 mm long. Spikes 7–15, 20–80 mm long, erect, silky-feathery; lower glume 1,5–2,5 mm long; upper glume 2,5–4,5 mm long; lowest lemma 2,5–4,0 mm long, with a crown of spreading hairs 1,5–4,0 mm long at apex; awns 2–15 mm long. *Flowering December to June*. Disturbed places on a variety of soil types. *Fourie 2538*.

W S C N E

Chrysopogon Trin. (s. Afr.: 1 sp.) 9900500

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 85.

serrulatus Trin.

(= *C. montanus* Trin. var. *tremulus* (Hack.) Stapf)

Perennial, sometimes rhizomatous and tufted, up to 1 m high. Leaf blades up to 300 mm long, 2–10 mm wide. Spikelets (sessile and pedicellate) 5–8 mm long (but sessile laterally compressed, pedicellate dorsally compressed). Inflorescence branches long, whorled, bare below, terminated by a triad of spikelets. *Flowering December to April*. Rocky hillsides, stony soils. *Smook 2626*.

W S C N E

Cleistachne Benth. (s. Afr.: 1 sp.) 9900480

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 86–87.

sorghoides Benth.

Coarse, robust annual, up to 2,5 m high. Leaf blades up to 1 m long, up to 14 mm wide. Spikelets 4–5 mm long, all alike, pedicellate, not paired, dark and glossy at maturity. *Flowering February to April*. Riverbanks and vleis. *Louw 2714*.

W S C N E

Coelachyrum Hochst. & Nees (s. Afr.: 1 sp.) 9903360

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 87–88.

yemenicum (Schweinf.) S.M. Phillips

(= *Cypholepis yemenica* (Schweinf.) Chiov.)

Perennial, slender, densely tufted (culms erect or geniculate), up to 0,63 m high. Leaf blades 70–320 mm long, 2,5–5,5 mm wide, leaf sheaths keeled. Spikelets 5–10 mm long. Racemes 2–8, far apart; spikelets 7–12-

flowered; lemma with club-shaped hairs near base. *Flowering February to June*. Calcareous pans, shallow limestone, often in light shade. *Codd 4455*.

W S C N E

Coix L. (s. Afr.: 1 sp.) 9900020

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 89.

*lacryma-jobi L.**

Annual, up to 1,2 m high. Leaf blades 100–500 mm long, 2–7 mm wide. Spikelets 7–10 mm long (unisexual). Inflorescence involucre hard, whitish and beadlike. *Flowering August to April*. Damp places. Native to East Indies. *Louw 2239*.

W S C N E

Cortaderia Stapf (s. Afr.: 2 spp.) 9902110

Robinson & Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 90–91.

jubata (Lem.) Stapf*

Perennial, tufted (densely), up to 3 m high. Leaf blades 1000–1500 mm long, 9–12 mm wide, leaves robust, mostly basal, up to half the height of culm, bright green, with cutting margins and midrib, flat or only slightly V-shaped in cross section, tips not setaceous. Panicle 600–800 mm long; with (1 or 2)3–5 florets per spikelet, all florets female only; glumes approximately equal, 9–13 mm long; glume veins, rhachises and rhachillas purple; lemmas 8–11(15) mm long. *Flowering November to February (rarely to March)*. Disturbed places. Native to the high Andes of South America. No specimens in PRE.

W S C N E

selloana (Schult.) Asch. & Graebn.*

Perennial, densely tufted, up to 4 m high. Leaf blades 800–1800 mm long, 8–10 mm wide, leaves robust, mainly basal, glaucous, up to two-thirds culm height; blades with cutting margins and midrib, usually markedly V-shaped in cross section, tips setaceous. Panicle 400–600(–700) mm long; spikelets either female or hermaphroditic (but then functionally male); female-fertile spikelets with (5–)6(–7) florets per spikelet, hermaphroditic spikelets with (1–)3(–4) florets; glumes of equal length, 8–15 mm long; glume veins, rhachises and rhachilla colourless; lemmas of female-fertile florets 10–14 mm long, those of hermaphroditic florets 12–15 mm long. *Flowering February and April*. Seasonally wet habitats. Native to South America. *Ellis 1117*.

W S C N E

Ctenium Panz. (s. Afr.: 1 sp.) 9902990

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 93.

concinnum Nees

Wiry perennial, tufted, up to 0,7 m high. Leaf blades 100–300 mm long, 2–5 mm wide. Spikelets 5–7 mm long. Inflorescence a one-sided spike, 50–170 mm long, sickle-shaped to corkscrew-like at maturity; upper glume tubercled; lemmas awned from below apex on nerves, with a spreading awn on back; female-fertile lemma 4,0–4,5 mm long; awns 4,5–5,5 mm long. *Flowering December to April*. Open veld on sandy or sometimes moist soils. *Smook* 4956.

W S C N E

Cymbopogon Spreng. (s. Afr.: 6 spp.) 9900720

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 94–95.

dieterlenii Stapf ex E. Phillips

Perennial, tufted, up to 0,85 m high. Leaf blades 300–500 mm long, setaceous or up to 2 mm wide; ligule 5–12 mm long, papery, pointed. Spikelets 5–6 mm long (sessile and pedicellate); lower glume of sessile spikelets winged, flattish. *Flowering November to April*. Open veld and rocky hillsides. *Henrici* 1281.

W S C N E

excavatus (Hochst.) Stapf ex Burt Davy

Perennial, tussocky, up to 1,5 m high. Leaf blades 50–300 mm long, 14 mm wide, rounded at base. Lowest culm nodes exposed. Spikelets (sessile) 3,5–5,0 mm long (pedicellate slightly shorter); lower glume of sessile spikelets with a deep narrow groove. *Flowering mostly November to May*. Open veld and hillsides. *Smook* 2624.

W S C N E

plurinodis (Stapf) Stapf ex Burt Davy

Perennial, tufted, up to 1 m high. Leaf blades 150–300 mm long, 2–4 mm wide (often folded and appearing setaceous). Spikelets (sessile) 5–6 mm long (pedicellate slightly shorter); lower glume of sessile spikelets deeply concave, usually wingless or with a narrow wing. *Flowering October to May*. Grassland. *Smook* 4296.

W S C N E

prolixus (Stapf) E. Phillips

Perennial, tufted, up to 1,2 m high. Leaf blades 300–500 mm long, 3–6 mm wide. Spikelets (sessile) 5–6 mm long (pedicellate equalling it or slightly smaller). Racemes nearly glabrous, lower glume of sessile spikelets winged, flattish. *Flowering October to April*. Rocky hillsides. *Smook* 3053.

W S C N E

validus (Stapf) Stapf ex Burt Davy
(= *C. afronardus* Stapf)

Robust perennial, tufted, up to 2,4 m high. Leaf blades 500–700 mm long, 5–10 mm wide. Spikelets (sessile) 4,5–6,0 mm long (pedicellate slightly shorter). Ra-

cemes nearly glabrous; lower glume of sessile spikelets winged, flattish. *Flowering July to June (but usually in autumn)*. Rocky hillsides and scrub vegetation, often in damp places. *Smook* 4961.

W S C N E

Cynodon Rich. (s. Afr.: 8 spp.) 9902960

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 95–97.

aethiopicus Clayton & Harlan*

Robust perennial, stoloniferous (often woody and coarse), up to 0,9 m high. Leaf blades 30–250 mm long, 3–7 mm wide. Spikelets 2,5–3,0 mm long. Racemes stiff, purple-pigmented, in multiple whorls; keel of lemma not winged, glabrous or with a few single hairs. *Flowering January to June*. Rich soils, particularly old cattle kraals and abandoned cultivation, also at moist streamsides. Native to tropical Africa. *Smook* 4140.

W S C N E

bradleyi Stent

Perennial, stoloniferous, up to 100 mm tall. Leaf blades 10–35 mm long, up to 2,5 mm wide, leaves densely or sparsely hairy. Spikelets 2–3 mm long. Spikes usually 3; rhachilla sometimes produced; lemma keel not winged. *Flowering December to March*. Fertile, well-drained soils. *De Winter* 382.

W S C N E

dactylon (L.) Pers.

Sward-forming perennial, rhizomatous and stoloniferous, up to 350 mm tall. Leaf blades 10–120 mm long, 2–4 mm wide. Spikelets 2,0–2,5 mm long. Racemes (3/4 or 5/6), in a single whorl; lemma keel wingless; upper glume half to three-quarters the spikelet length; rhachilla produced. *Flowering September to May*. In most soils along roadsides and overgrazed, trampled areas. *Smook* 7485, *Du Toit* 630.

W S C N E

hirsutus Stent

Perennial, stoloniferous, up to 250 mm tall. Leaf blades 15–30 mm long, 2–4 mm wide, hairy. Spikelets broadly ovate, 2,0–2,5 mm long; glumes more than half the spikelet length; lemma keel winged; rhachilla not produced. *Flowering October to April*. Well-drained loam soils. *Turner* 384.

W S C N E

incompletus Nees

Perennial, stoloniferous, up to 300 mm tall. Leaf blades 30–60 mm long, 2–3 mm wide, glabrous or sparsely hairy. Spikelets 2,5–3,0 mm long, narrowly ovate; glumes less than half the spikelet length; lemma keel winged; rhachilla not produced. *Flowering November to May*. Sandy loam to turf soils. *Theron* S656.

W S C N E

nlemfuensis *Vanderyst**

Perennial, stoloniferous (stolons stout and woody, plants otherwise fairly soft), up to 0,6 m high. Leaf blades 50–160 mm long, 2–6 mm wide. Spikelets 2–3 mm long. Spikes usually slender, flexuous and spreading; lemma very densely, silky pubescent, keel not winged. *Flowering January to March*. In disturbed areas such as old lands, cattle paddocks and road verges, also moist stream-sides and weedy places. Native to Kenya. *Scheepers 148*.

W	S	C	N	E
---	---	---	---	---

polevansii *Stent*

Compact perennial, rhizomatous, up to 120 mm tall. Leaf blades 10–20 mm long, ± 2 mm wide, rigid. Spikelets 2,7–3,5 mm long. Spikes 2, not reflexed; rhachilla not produced. *Flowering December*. Moist areas. *Pole-Evans 335*.

W	S	C	N	E
---	---	---	---	---

transvaalensis *Burt Davy*

Perennial, rhizomatous, up to 300 mm tall. Leaf blades 1,0–1,5 mm wide, involute and filiform. Spikelets 2,0–2,5 mm long. Spikes usually 2, reflexed at maturity; rhachilla produced and often longer than lower glume. *Flowering November to May*. Roadsides and weedy places. *Devenish 1868*.

W	S	C	N	E
---	---	---	---	---

Dactylis *L. (s. Afr.: 1 sp.)*

9903980

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 99.

glomerata *L.**

Perennial, densely and coarsely tufted, or rhizomatous (rhizome oblique), up to 0,8 m high. Leaf blades 100–450 mm long, 2–14 mm wide, folded at first, pilose on upper surface, glabrous, shining and smooth below; ligule membranous, 2–10 mm long. Spikelets 5–9 mm long. Panicle 50–300 mm long; racemes closely spaced, lowest usually solitary, remote and bare at base; spikelets 3–5(–7)-flowered, laterally compressed; glumes and lemmas strongly keeled, keels finely or coarsely ciliate, tips acuminate, mucronate or awned, awn to 1,5 mm long. *Flowering July to August and November to February*. Mostly in cultivation but also in other disturbed places like roadsides. Native of Europe. *Burgoyne 948*.

W	S	C	N	E
---	---	---	---	---

Dactyloctenium *Willd. (s. Afr.: 4 spp.)*

9903320

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 99–101.

egyptium (*L.*) *Willd.*

Mat-forming annual, tufted (culms geniculately ascending and rooting at nodes), up to 0,75 m high. Leaf

blades 30–250 mm long, 3–8 mm wide. Spikelets 3,5–4,5 mm long. Spikes 4–8, 15–65 mm long; lemma keel scabrid above middle, ending in a mucro to 1 mm long; anthers 0,3–0,8 mm long; grains broadly triangular, apex truncate to concave. *Flowering January to April*. Disturbed areas near water. *Smook 4240*.

W	S	C	N	E
---	---	---	---	---

australe *Steud.*

Perennial, stoloniferous, up to 0,81 m high. Leaf blades 50–270 mm long, 2,0–4,5 mm wide. Spikelets 3–4 mm long. Spikes 2 or 3, 30–50 mm long; lemma keel scabrid above middle, awn 0,5–0,7 mm long; anthers 1,3–1,7 mm long; grains obovate, apex rounded to convex. *Flowering January to May*. Sandy soils on seashores, dunes and along forest roads, often in light shade. *Repton 2921*.

W	S	C	N	E
---	---	---	---	---

geminatum *Hack.*

Mat-forming perennial, rhizomatous and stoloniferous, up to 0,8 m high. Leaf blades 40–250 mm long, 3–6 mm wide. Spikelets 3,0–5,3 mm long. Spikes usually 2(or 3), 25–70 mm long; lemma tips acute; anthers 1,1–1,7 mm long; grains obovate, apex rounded to convex. *Flowering December to March*. On sandy soil of alkaline pans and on sand dunes, in swamp forest undergrowth, coastal sandflats and open grassland. *De Winter & Codd 545*.

W	S	C	N	E
---	---	---	---	---

giganteum *Fisher & Schweick.*

Robust annual, tufted (erect), up to 1,1 m high. Leaf blades 110–450 mm long, 5–12 mm wide. Spikelets 4,0–6,2 mm long. Spikes 3–9, 35–110 mm long; lemma keels scabrid; awns 0,7–2,0 mm long; grains triangular, apex truncate to concave. *Flowering November to May*. Open veld or disturbed areas on riverbanks or near water, often in shade. *Du Toit 1031*.

W	S	C	N	E
---	---	---	---	---

Danthoniopsis *Stapf (s. Afr.: 6 spp.)*

9901770

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 101–102.

dinteri (*Pilg.*) *C.E. Hubb.*

Annual, tufted, up to 2 m high. Leaf blades 300–600 mm long, 8–15 mm wide. Culms robust, unbranched. Spikelets 14–20 mm long. Inflorescence light green variegated with dark purple; spikelets in lax triads, pedicels unequal, the 2 lower spikelets usually reduced; lower lemma 7-nerved; female-fertile lemma loosely hairy, lobes acute and 4 mm long, central awn 10–22 mm long. *Flowering February to June*. Among rocks and in rock crevices on mountains. *Ellis 1942*.

W	S	C	N	E
---	---	---	---	---

parva (*J.B. Phipps*) Clayton

Perennial, tufted, up to 0,6 m high. Leaf blades up to 50 mm long, 3 mm wide. Culms delicate. Spikelets $\pm$ 4 mm long. Inflorescence straw-coloured; spikelets in pairs; upper glume 5-nerved; lower lemma 3-nerved, awns 7–10 mm long. *Flowering January to May*. Rock crevices on cliffs. *Smook 5401*.

W	S	C	N	E
---	---	---	---	---

pruinosa C.E. Hubb.

Perennial, tufted, up to 1,8 m high. Rhizome swollen, woody; culms brittle, often branched, with a waxy bloom below node, nodes occasionally hairy. Leaf blades 100–250 mm long, 5–9 mm wide. Spikelets 5–9 mm long, spikelets light or sienna brown; upper glume and lower lemma 3-nerved; lower lemma with 3 tufts of white hairs on either side above middle, lobes acute and 1,0–1,5 mm long, awns 7–12 mm long. *Flowering December to June*. Among rock and rock crevices on mountains; granite outcrops and other rock types. *Raal 467*.

W	S	C	N	E
---	---	---	---	---

Diandrochloa De Winter (s. Afr.: 2 spp.) 9902852

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 104.

namaquensis (Nees) De Winter
(= *Eragrostis namaquensis* Nees ex Schrad.)

Annual, tufted, up to 1,5 m high. Leaf blades 60–300 mm long, 2–6 mm wide. Spikelets 2–3 mm long. Inflorescence branches somewhat contracted, young branches often wavy; spikelets 4–8-flowered, very delicate. *Flowering July to June (with peak from March to May)*. Always near water on sandy or clayey soil. *Ellis 2092*.

W	S	C	N	E
---	---	---	---	---

pusilla (Hack.) De Winter
(= *Eragrostis pusilla* Hack.)

Annual, tufted, up to 420 mm tall. Leaf blades 50–150 mm long, 2–5 mm wide. Spikelets 1,0–1,5 mm long. Inflorescence branches spreading when fully developed, spikelets 2–4-flowered, very delicate. *Flowering March to May*. Always near water in sandy or clayey soil, often in shade. *De Winter & Codd 313*.

W	S	C	N	E
---	---	---	---	---

Dichanthium Willemet (s. Afr.: 2 spp.) 9900640

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 105.

annulatum (Forssk.) Stapf var. **papillosum** (A. Rich.)
De Wet & Harlan

(= *D. nodosum* sensu Acocks, non Willemet,
= *D. papillosum* (Hochst.) Stapf)

Perennial, densely tufted, up to 1 m high. Nodes with a ring of spreading hairs. Culms glabrous below inflores-

cence. Leaf blades 30–300 mm long, 7 mm wide. Spikelets (sessile) 2,5–5,0 mm long, 1,0–1,5 mm wide; lower glume of sessile spikelets to 1,5 mm wide. *Flowering July to June (mostly in late summer)*. Riverbanks and wet places. *Smook 5333*.

W	S	C	N	E
---	---	---	---	---

aristatum (Poir.) C.E. Hubb.*

Perennial, tufted, up to 1,1 m high. Nodes glabrous or short-wooly. Culms velvety below inflorescence. Leaf blades 30–250 mm long, 2–7 mm wide. Spikelets (sessile) 3,0–4,5 mm long, 2,5 mm wide; lower glume of sessile spikelets to 2,5 mm wide. *Flowering October to June*. Disturbed and moist places. Native to tropical Asia. *Mogg 13709*.

W	S	C	N	E
---	---	---	---	---

Digitaria Haller (s. Afr.: 36 spp.) 9900890

Goetghebeur & Van der Veken. 1989. F.Z. 10,3: 133–178.

Kok & Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 106–114.

argyrograpta (Nees) Stapf

Perennial, rhizomatous and tufted, up to 0,6 m high. Rhizomes knotty. Culms profusely branched from lower nodes. Leaf blades 40–200 mm long, 1–3 mm wide. Spikelets up to 3 mm long, 0,8 mm wide. Racemes usually in pairs 40–100 mm long, often adhering to each other because hairs on spikelets become entangled; lower glume two-thirds to four-fifths as long as spikelet; lower lemma 7-nerved with 3 nerves close together in middle, thus with narrow interspaces adjacent to central nerve. *Flowering November to March*. Wide range of habitats. *Bredenkamp & Van Vuuren 62*.

W	S	C	N	E
---	---	---	---	---

brazzae (Franch.) Stapf

Perennial, densely tufted, up to 1,1 m high. Leaf blades 60–100 mm long, 2–4 mm wide. Cataphylls and basal sheaths densely covered with silky hairs. Spikelets 2,8–3,2 mm long, 1 mm wide. Racemes 2–4, digitate, 150–200 mm long; spikelets in clusters of 2–4(–5); upper glume half to three-quarters as long as spikelet; lower lemma depressed and hyaline beside midnerve, with hairs 2–4 mm long forming 2 tufts at base and fringing upper half of margin. *Flowering September to April*. Grows in grassland, usually sandy soil, often on stony hillsides. *Du Toit 1236*.

W	S	C	N	E
---	---	---	---	---

ciliaris (Retz.) Koeler

(= *D. adscendens* Henrard,
= *D. marginata* Link)

Annual, tufted, up to 0,55 m high. Leaf blades 30–160 mm long, 3–10 mm wide. Spikelets 2,3–3,4 mm long, 1 mm wide. Racemes 3–7, digitate, 40–100 mm long; lower glume a triangular scale up to 0,3 mm long; lower lemma not scaberulous. *Flowering January to April*. Mainly disturbed sandy soil. *Smook 4400, 4400A*.

W	S	C	N	E
---	---	---	---	---

debilis (Desf.) Willd.

Annual, tufted, 500 mm tall. Leaf blades 20–25 mm long, 2–4 mm wide. Culms decumbent at base and rooting from lower nodes. Spikelets 2,1–3,1 mm long, 1 mm wide. Racemes 60–160 mm long, 4–12, subdigitate, on a central axis up to 60 mm long; spikelets solitary or paired; lower and upper glume separated by an internode 0,1–0,3 mm long; upper glume longer than spikelet but shorter than 4,5 mm and tip acuminate. *Flowering November to June*. Mainly damp places and sandy soil. *Smook 4183*.

W	S	C	N	E
---	---	---	---	---

diagonalis (Nees) Stapf var. **diagonalis**

(= *D. trichopodia* Stent,
= *D. uniglumis* (A. Rich.) Stapf)

Perennial, tufted, up to 1,5 m high. Leaf blades 90–170 mm long, 2–3 mm wide. Culms swollen and bulbous at base; basal leaf sheaths silky hairy, breaking up into fibres. Spikelets 1,4–2,4 mm long, 1 mm wide. Inflorescence a panicle; spikelets in groups of 3(–6), on unequal pedicels with 10–15 white setae as long as or longer than spikelets; female-fertile (upper) floret bright dark brown or black. *Flowering January to April*. Grows in open, usually sourveld grassland, often hillsides and in damp places. *Ellis & Loxton 791*.

W	S	C	N	E
---	---	---	---	---

didactyla Willd.

(= *D. swazilandensis* Stent)

Perennial, weakly tufted or stoloniferous (and mat-forming), up to 300 mm tall. Rhizomes knotty. Leaf blades 25–50 mm long, 1,0–1,8 mm wide. Culms sometimes branched and rooted at lower nodes. Spikelets 2,5–2,8 mm long, 0,8 mm wide. Racemes 2–4, digitate, 30–65 mm long. *Flowering October to April*. Disturbed sandy soil. *Smook 1986*.

W	S	C	N	E
---	---	---	---	---

diversinervis (Nees) Stapf

(= *D. albomarginata* Stent,
= *D. diversinervis* (Nees) Stapf var. *woodiana* Henrard)

Perennial, rhizomatous and stoloniferous (and mat-forming), up to 350 mm tall. Rhizomes knotty, much-branched. Leaf blades 20–90 mm long, 3–8 mm wide. Spikelets 3–4 mm long, 1 mm wide. Racemes 2–5, digitate, 30–77 mm long; lower glume a well developed scale up to 1 mm long; upper glume half to two-thirds the length of spikelet; upper glume and lower lemma glabrous or hairy along margins. *Flowering November to June*. Mainly sandy coastal areas. *Chippindal 347*.

W	S	C	N	E
---	---	---	---	---

eriantha Steud.

(= *D. smutsii* Stent)

Perennial, sometimes stoloniferous or tufted and rhizomatous, up to 1,4 m high. Rhizomes knotty and unbranched. Leaf blades 50–400 mm long, 2–14 mm wide. Culms simple or branched, basal leaf sheaths silky and hairy. Spikelets 2,2–4,0 mm long, 1 mm wide. Racemes 3–15, digitate, 50–200 mm long; lower glume a membranous scale, ovate to acute; upper glume a

third to two-thirds as long as spikelet; lower lemma as long as spikelet; upper glume and lower lemma covered with hairs 1 mm long, purple and silvery. *Flowering January to April*. Occurs in a wide range habitats. *Smook 5400*.

W	S	C	N	E
---	---	---	---	---

eylesii C.E. Hubb.

Perennial, rhizomatous or tufted, up to 0,65 m high. Rhizomes creeping, branched, with cataphylls. Leaf blades 50–130 mm long, 2–4 mm wide. Spikelets 2,3–3,0 mm long, 1 mm wide. Racemes usually in pairs or threes, rarely solitary, 100–180(–240) mm long; female-fertile (upper) floret purplish brown or black. *Flowering January to April*. Grows in wet places. *Ellis 2081*.

W	S	C	N	E
---	---	---	---	---

flaccida Stapf

Perennial, densely tufted and rhizomatous, up to 400 mm tall. Rhizomes knotty, with hairy cataphylls. Leaf blades 40–100 mm long, 1,5–3,0 mm wide. Spikelets 1–3 mm long, 1 mm wide. Inflorescence panicle-like with 6–17 racemes, 30–55 mm long; spikelets paired; upper glume and lower lemma covered with silky purplish hairs up to 2 mm long. *Flowering November to January*. Mainly on rocky ground, mountain sourveld. *Ellis 2826*.

W	S	C	N	E
---	---	---	---	---

gymnostachys Pilg.

Perennial, loosely tufted, up to 1 m high. Leaf blades 60–300 mm long, 7–15 mm wide. Spikelets 3–4 mm long, 1 mm wide. Racemes 6–13, 100–300 mm long, subdigitate on central axis up to 60 mm long; spikelets paired; lower and upper glumes are small scales 0,2–0,5 mm long, separated from rest of spikelet by an internode 0,2–0,5 mm long. *Flowering February to April*. Mainly sandy soil. *Codd 6867*.

W	S	C	N	E
---	---	---	---	---

longiflora (Retz.) Pers.

Perennial (short-lived) or annual, mat-forming and stoloniferous or tufted (loosely), up to 350 mm tall. Leaf blades 18–70 mm long, 1,6–4,5 mm wide. Culms rooting from lower nodes. Spikelets 1,2–1,6 mm long, 0,6 mm wide. Racemes 2 (or 3), digitate, 30–70 mm long, spikelets in pairs or threes and tending to bend outwards; rachis winged with low rounded midrib; upper glume and lower lemma as long as spikelet and covered with hairs 0,2 mm long; female-fertile (upper) lemma grey to purplish. *Flowering October to June*. Disturbed areas, mainly sandy soil. *Ellis 456*.

W	S	C	N	E
---	---	---	---	---

maitlandii Stapf & C.E. Hubb.

(= *D. apiculata* Stent)

Perennial, tufted, up to 410 mm tall. No rhizome. Leaf blades 40–130 mm long, 2–4 mm wide. Spikelets 1–2 mm long, 0,8–1,0 mm wide. Racemes 3–6, 50–80 mm long, subdigitate on a short central axis; spikelets in

groups of 3, glabrous or with a few hairs; female-fertile (upper) floret purplish brown or black. *Flowering November to May*. Mountain grassland. *Scheepers 831*.

W S C N E

milanjiana (Rendle) Stapf

Perennial, rhizomatous and stoloniferous or tufted, up to 1,3 m high. Rhizomes branched, slender and elongate. Leaf blades 60–300 mm long, 2–8 mm wide. Culms usually straight and erect. Spikelets 2,5–3,2 mm long, 0,8 mm wide. Racemes 3–12, digitate, 80–250 mm long; spikelet similar to *D. eriantha* but hairs yellowish or brown and nerves of lower lemma scaberulous. *Flowering January and February*. Occurs in a wide range of habitats, often in disturbed areas. *Oakes & Scheepers 276*.

W S C N E

monodactyla (Nees) Stapf

(= *D. monodactyla* Stapf var. *explicata* Stapf)

Perennial, densely tufted, up to 0,55 m high. Leaf blades 30–60 mm long, 1,8–2,2 mm wide, often rolled. Culm with hairy cataphylls. Spikelets 2,8–3,2 mm long, 1 mm wide. Raceme solitary, 50–180 mm long; spikelets in pairs; upper glume and lower lemma covered with yellow hairs 1 mm long; female-fertile (upper) floret light brown. *Flowering November to February*. Open grassland, usually highland sourveld. *Theron 2462*.

W S C N E

natalensis Stent

(= *D. macroglossa* Henrard)

Perennial, loosely to densely tufted and rhizomatous, up to 1,5 m high. Rhizomes knotty. Leaf blades 80–250 mm long, 2–6 mm wide; ligule membranous, 3,5–12,0 mm long. Culm lower nodes straight and covered by bright, reddish, brown sheaths. Spikelets 2,8–3,5 mm long, 0,8 mm wide. Racemes 4–12, digitate, 100–200 mm long; spikelet characters as in *D. eriantha*. *Flowering December to June*. Mainly sandy ground. *Sampson sub PRE 357*.

W S C N E

nuda Schumach.

(= *D. borbonica* Desv.)

Annual, tufted, up to 500 mm tall. Leaf blades 20–135 mm long, 2–10 mm wide. Culms decumbent at base, geniculate and ascending, rooting from lower nodes. Spikelets 1,6–2,3 mm long, 0,8 mm wide. Racemes 3–8, digitate or subdigitate, 40–100 mm long; lower glume absent, or if present then a minute rim, obscure. *Flowering November to April*. Open disturbed areas. *Kinsler 438*.

W S C N E

perrottetii (Kunth) Stapf

Annual, loosely tufted, up to 0,8 m high. Leaf blades 30–90 mm long, 3–15 mm wide. Culms decumbent and rooting from lower nodes. Spikelets 1,5–2,0 mm long, 1 mm wide. Panicle 80–200 mm long, racemes ar-

ranged in 8–12 whorls on a central axis, each whorl consisting of 4–8 racemes, 20–50 mm long; spikelets solitary or in pairs, widely spaced on axis; upper glume as long as spikelet. *Flowering January to June*. Damp, shady, sandy areas. *Smook 1985*.

W S C N E

polyphylla Henrard

Perennial; rhizomatous and stoloniferous, or tufted (densely), 300–500 mm tall. Rhizome knotty. Leaf blades 50–130 mm long, 2,5–5,0 mm wide. Culms with lower nodes unbranched, middle and upper nodes profusely branched and forming leafy tufts. Spikelet characters as in *D. eriantha*. Racemes 2–6, digitate, 30–80 mm long. *Flowering February to April*. Sandy and stony ground, low rainfall areas. *Gubb 133/17*.

W S C N E

sanguinalis (L.) Scop.*

Annual, tufted, up to 0,6 m high. Leaf blades 27–170 mm long, 3–10 mm wide. Culms branched, decumbent and rooting from lower nodes. Spikelets 2,3–3,1 mm long, 1 mm wide. Racemes 3–12, digitate or subdigitate, 40–105 mm long; lower lemma equalling or shorter than spikelet, scaberulous along nerves, very rarely with a ciliate frill. *Flowering November to May*. Disturbed areas. Native to Europe. *Smook 4401*.

W S C N E

scalarum (Schweinf.) Chiov.

(= *D. abyssinica* sensu Kok & H.M. Anderson, non (A. Rich.) Stapf,

= *D. vestita* Figert & De Not. var. *scalarum* (Schweinf.) Henrard)

Perennial, rhizomatous (mat-forming), up to 350 mm tall. Rhizomes long, wiry. Leaf blades 40–70 mm long, 3–6 mm wide. Culms branched at nodes. Spikelets 1,8–2,2 mm long, 1 mm wide. Racemes 3–11, subdigitate, 20–80 mm long; spikelets paired, rarely solitary; upper glume and lower lemma as long as spikelet, glabrous and often tinged with purple; female-fertile (upper) floret light brown, grey and purple. *Flowering November to June*. Mainly disturbed ground. *Smook 3573*.

W S C N E

seriata Stapf

(= *D. polevansii* Stent)

Perennial, loosely or densely tufted, stoloniferous and rhizomatous, up to 1,2 m high. Rhizomes knotty, branched and woody. Leaf blades 100–350 mm long, 3–9 mm wide. Culm base bulbous and covered with densely hairy scales. Spikelets 2,5–3,2 mm long, 1 mm wide. Racemes 3–12, digitate to subdigitate, 100–230 mm long; spikelets like those of *D. eriantha*. *Flowering January to April*. Mainly sandy soil. *Zambatis 996*.

W S C N E

setifolia Stapf

Perennial, densely tufted, up to 500 mm tall. Leaf blades 50–140 mm long, 1,5–3,0 mm wide, usually rolled, old leaf sheaths breaking up into brown fibres at base. Spikelets 3–4 mm long, 1 mm wide. Racemes

40–120 mm long, (2)3 or 4(5), subdigitate on a short central axis; spikelets in pairs or threes; upper glume and lower lemma with conspicuous rows of bright brown, clavate hairs; female-fertile (upper) floret dark brown. *Flowering September to January*. Grows in mountain sourveld areas, usually in damp places or vleis. *Smook 4807*.

W S C N E

ternata (A. Rich.) Stapf

Annual, loosely tufted, up to 0,6 m high. Leaf blades 20–200 mm long, 1–7 mm wide. Spikelets 1,5–2,3 mm long, 0,8 mm wide. Racemes 40–200 mm long, 2–6, in pairs or subdigitate on short central axis, midrib winged; spikelets in clusters of (2 or) 3; pedicels with a corona of short hairs at apex; upper glume three-quarters as long as spikelet; upper glume and lower lemma covered with white clavate hairs; female-fertile (upper) floret dark brown or purplish black. *Flowering November to May*. Damp and disturbed areas. *Smook 3096*.

W S C N E

thouaresiana (Flüggé) A. Camus

(= *D. melanochila* Stapf,
= *D. tricolostata* (Hack.) Henrard)

Annual, tufted, up to 1 m high. Leaf blades 30–200 mm long, 2–8 mm wide. Spikelets 1,0–1,7 mm long, 0,8 mm wide. Racemes 2–14, subdigitate, 20–120 mm long; spikelets in clusters of 3 or 4 on winged rhachis; pedicels without corona of hairs, only a few hairs at apex; upper glume and lower lemma rarely glabrous, usually covered with white clavate hairs; female-fertile (upper) floret dark brown to black. *Flowering February to May*. Marshy places and disturbed sites. *Smook 3071*.

W S C N E

tricholaenoides Stapf

Perennial, rhizomatous and tufted, up to 0,55 m high. Rhizome oblique, up to 100 mm long, covered with hairy, persistent, overlapping bases of old leaf sheaths. Leaf blades 40–200 mm long, 2–7 mm wide. Spikelets 3–5 mm long, 1 mm wide. Racemes 2 or 3(–7) subdigitate, 30–130 mm long; spikelets in clusters of 2–5; upper glume two-thirds to half length of spikelet, covered with silvery or purplish hairs 1–2 mm long; lower lemma covered (except for central interspace) with silvery or purplish hairs 2–4 mm long. *Flowering November to March*. In open, sourveld grassland mainly on stony soil. *Godfrey & Acocks SH1610*.

W S C N E

velutina (Forssk.) Beauv.

(= *D. zeyheri* (Nees) Henrard)

Annual, very loosely tufted, up to 0,8 m high. Leaf blades 40–150 mm long, 3–10 mm wide. Culms decumbent at base, rooting from lower nodes. Spikelets 1,5–2,0 mm long, 0,5 mm wide. Inflorescence panicle-like, racemes 35–100 mm long, 5–15, subdigitate on a relatively long central axis 25–50 mm long; lower glume obscure or an ovate scale up to 0,2 mm long; upper glume and lower lemma almost glabrous. *Flow-*

ering December to May. Open disturbed areas. *Codd 8374*.

W S C N E

Diheteropogon (Hack.) Stapf (s. Afr.:

2 spp.)

9900810

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 114–115.

amplectens (Nees) Clayton

(= *Andropogon amplectens* Nees)

Perennial, rhizomatous, up to 2 m high. Leaf blades 150–300 mm long, 20 mm wide, bases rounded, clasping stem; young growth waxy. Spikelets (sessile) 7–9 mm long (pedicellate longer). *Flowering November to April*. Poor shallow soils on stony slopes and in woodland. *Smook 2627*.

W S C N E

filifolius (Nees) Clayton

(= *Andropogon filifolius* (Nees) Steud.)

Perennial, rhizomatous and tufted, up to 0,6 m high. Leaf blades 100–500 mm long, filiform or up to 3,5 mm wide, thread-like, bluish green. Spikelets (sessile) 6–8 mm long (pedicellate much longer). *Flowering October to April*. Sour open grassland on hillsides. *Pole-Evans 1009*.

W S C N E

Dinebra Jacq. (s. Afr.: 1 sp.)

9903300

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 116.

retroflexa (Vahl) Panz. var. **condensata** S.M. Phillips

Annual, loosely tufted, up to 0,82 m high. Leaf blades 45–280 mm long, 4–8 mm wide. Spikelets 5,7–9,0 mm long. Spikes up to 50 mm long; glumes 6,0–8,2 mm long, with spreading aristate tips. *Flowering December to May*. Usually on disturbed soil in moist weedy places, often in shade and on black turf or waterlogged soils. *Acocks 16804*.

W S C N E

Diplachne P. Beauv. (s. Afr.: 4 spp.) 9903450

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 116–118.

eleusine Nees

Perennial, rhizomatous and tufted (culms geniculate ascending), up to 1,27 m high. Leaf blades 120–270 mm long, 2–4 mm wide; ligule a hairy membrane, 1,5 mm long. Spikelets 4–8 mm long. Spikes 2–8, distant; spikelets overlapping, 5–10-flowered; lemma tip obtuse to minutely notched. *Flowering November to*

April. Sandy soils, rocky slopes or in shade of trees, occasionally on turf soils. *Smook* 4249.

W S C N E

fusca (L.) Beauv. ex Roem. & Schult.

(= *D. malabarica* sensu Adamson, non (L.) Merr.)

Perennial, hydrophyte, rhizomatous, stoloniferous and tufted, up to 1.5 m high. Leaf blades 250–550 mm long, 3–5 mm wide; ligule a conspicuous membrane, up to 5 mm long. Spikelets 6–14 mm long. Racemes numerous; spikelets not overlapping, 5–12-flowered; lemma tips acute. *Flowering* October to May. Sandy soil, almost always near or in fresh or brackish water to 500 mm deep. *Ellis* 1908.

W S C N E

Echinochloa *P. Beauv.* (s. Afr.: 9 spp.) 9901120

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 119–121.

colona (L.) Link

Annual, hydrophyte, stoloniferous and tufted, up to 1 m high. Leaf blades 50–300 mm long, 2–8 mm wide; ligule absent. Spikelets 1.5–3.0 mm long, 1.0–1.5 mm wide, pubescent. Inflorescence 10–150 mm long; racemes neatly 4-rowed, 10–25 mm long; lower floret male or sterile; lower lemma not awned (tip sometimes up to 1 mm long). *Flowering* January to April. Muddy or swampy places. *Smook* 5359.

W S C N E

crus-galli (L.) Beauv.*

(= *E. subverticillata* Pilg.)

Annual, hydrophyte, stoloniferous and tufted, up to 1 m high. Leaf blades 70–350 mm long, 4–20 mm wide; ligule absent. Spikelets 3 or 4(–7) mm long, 1–2 mm wide. Inflorescence 60–220 mm long; racemes untidily 2- to several-rowed, 20–100 mm long and usually with secondary branchlets at base; lower floret sterile; lower lemma usually awnless, rarely with an awn 5–10 mm long. *Flowering* January to April. Swampy areas, wet places of cultivation. Native to temperate Eurasia. *Codd* 5404.

W S C N E

haploclada (Stapf) Stapf

Perennial, hydrophyte, rhizomatous and tufted, up to 3 m high. Leaf blades 50–100 mm long, 3–10(–20) mm wide; ligule absent or a fringe of hairs. Spikelets 1.5–2.5(–3) mm long, 1.0–1.5 mm wide. Inflorescence 70–250 mm long; racemes 10–50 mm long, densely crowded with appressed spikelets; lower floret male; lower lemma acute or with awns, 5–15 mm long. *Flowering* March to April. Streambanks, dry riverbeds. *Davidse & Ellis* 5869.

W S C N E

holubii (Stapf) Stapf

Perennial, hydrophyte, rhizomatous and tufted, up to 0.9 m high. Leaf blades 180–220 mm long, (2–)4(–8)

mm wide; ligule a fringe of hairs, sometimes absent in upper leaves. Spikelets 2.5–3.5 mm long, 1.0–1.5 mm wide. Inflorescence (80–)120(–180) mm long, racemes distant, 15–40 mm long; lower floret male or sterile; lower lemma awnless, tip acute to acuminate, 3 mm long. *Flowering* December to April. Swampy areas, pans and vleis. *Smook* 4415.

W S C N E

jubata Stapf

Perennial, hydrophyte, rhizomatous and stoloniferous, up to 2 m high. Leaf blades 100–250 mm long, 3–15 mm wide; ligule a fringe of hairs, sometimes absent from upper leaves. Spikelets 3.0–3.5(–4.0) mm long, 1 mm wide. Inflorescence dense, 80–200 mm long; racemes 20–40 mm long; spikelets narrowly elliptic and closely packed; lower floret male or sterile; lower lemma with awns 3–25 mm long. *Flowering* November to May. Growing in water and stream sides, often floating in water. *Zambatis* 1376.

W S C N E

pyramidalis (Lam.) Hitchc. & Chase

Perennial, hydrophyte, rhizomatous, stoloniferous and tufted, up to 4 m high. Leaf blades 80–600 mm long, 5–20 mm wide; ligule a fringe of hairs, sometimes absent in upper leaves. Culms robust. Spikelets 2.5–4.0 mm long, 1.0–1.8 mm wide. Inflorescence (150–)200 (–400) mm long; racemes simple or compound, 25–35 mm long; lower floret male; lower lemma awnless, tip acute to acuminate, 3 mm long. *Flowering* December to May. Swamps and riversides, usually in standing in water and sometimes floating. *De Winter* 636A.

W S C N E

ugandensis Snowden & C.E. Hubb.

Annual, hydrophyte, stoloniferous and tufted, up to 0.8 m high. Leaf blades 70–200 mm long, 3–6 mm wide; ligule a fringe of hairs. Spikelets 2.3–3.0 mm long, 1.5 mm wide. Inflorescence 50–200 mm long, linear with racemes neatly 4-rowed and up to 30 mm long; spikelets pubescent; lower floret sterile; lower lemma acute or with awn up to 6 mm long. *Flowering* January. Swampy areas, shallow pools. *Smook* 5337.

W S C N E

Ehrharta *Thunb.* (s. Afr.: 23 spp.) 9901600

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 121–128.

erecta Lam. var. *erecta*

Perennial, loosely tufted, up to 0.6 m high. Leaf blades 30–150 mm long, 3–12 mm wide (soft). Spikelets 3.0–4.2 mm long; glumes half to three-quarters the length of lemmas; sterile lemmas similar in texture, sides not long-hairy, usually deeply corrugated especially on upper half, tips abruptly rounded, bases not bearded. *Flowering* July to June

(most commonly October to January). Shady moist places, often at forest margins, apparently weedy in Johannesburg. *Morgan 27.*

W S C N E

erecta Lam. var. **natalensis** Stapf

Perennial, loosely tufted (or rambling), up to 0,9 m high. Leaf blades up to 270 mm long, 16 mm wide. Spikelets 4,2–5,0 mm long; glumes half to three-quarters the length of lemmas; sterile lemmas similar in texture, sides not long-hairy, longitudinally nerved or only shallowly corrugated, tapering gradually to sub-acute tips, upper sterile lemma often bearded at base. *Flowering October to April (occasionally to June).* Shady moist places, especially forest margins. *Davidse & Ellis 5828.*

W S C N E

Eleusine Gaertn. (s. Afr.: 4 spp.) 9903310

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 129–130.

coracana (L.) Gaertn. subsp. **africana** (Kenn.-O'Byrne) Hilu & De Wet

(= *E. africana* Kenn.-O'Byrne,
= *E. indica* (L.) Gaertn. subsp. *africana* (Kenn.-O'Byrne) S.M. Phillips)

Annual, tufted, up to 0,62 m high. Leaf blades 220–500 mm long, 6–10 mm wide. Spikelets 5–8 mm long, 3–4 mm wide. Spikes 3–13, 60–170 mm long, 4–10 mm wide; spikelets 2–6-flowered, not disarticulating at maturity; grains globose. *Flowering October to May.* Ruderal, on many soil types. *Hanekom 2254.*

W S C N E

multiflora Rich.

Annual, tufted (culms fairly slender and ascending), up to 400 mm tall. Leaf blades 60–260 mm long, 3–6 mm wide. Spikelets 7–11 mm long. Spikes 2–8, stout, 15–25 mm long, 8–15 mm wide, alternating on a short axis. *Flowering February to April.* Disturbed places in bush- or grassland. *Smook 5050.*

W S C N E

tristachya (Lam.) Lam.

Perennial, tufted, up to 180 mm tall. Leaf blades 50–180 mm long, 3–5 mm wide. Spikelets 4–7 mm long. Inflorescence digitate; spikes 1–4, stout, 10–25 mm long, 4–11 mm wide; spikelets 2- or 3-flowered. *Flowering February to April.* Disturbed weedy places. *De Winter 8449.*

W S C N E

Elionurus Kunth ex Willd. (s. Afr.: 2 spp.) 9900280

Gibbs Russell. 1990. In Gibbs Russell *et al.*, southern Africa: 130–131.

muticus (Spreng.) Kunth

(= *E. argenteus* Nees,
= *E. glaber* E. Phillips)

Perennial, densely tufted, up to 1,2 m high. Leaves basal, leaf blades 10–150 mm long, setaceous or up to 1–2 mm wide. Spikelets (sessile) 6–14 mm long (pedicellate somewhat shorter); lower glume of sessile spikelets with long dense, silky, white hairs, tip bidentate. *Flowering September to May.* In open grassland, especially sourveld. *Behr 652.*

W S C N E

Elytrophorus P. Beauv. (s. Afr.: 2 spp.) 9903700

Barker. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 133–134.

globularis Hack.

Annual, hydrophyte, up to 500 mm tall. Leaves often overtopping inflorescence, leaf blades 30–500 mm long, 3–8 mm wide. Spikelets 4–7 mm long (including lemma awns). Panicle narrow, interrupted, up to 200 mm long; spikelets clustered into dense, globose aggregations 8–12 mm in diameter and spaced at intervals of 10–25 mm up the axis, sometimes confluent near apex; clusters subtended by 2 to many bracts, each to 12 mm long; glumes 4,5–6,0 mm long; lemmas 3,5–5,0 mm long, including stiff awn; anthers 1–3, 1,5–2,0 mm long. *Flowering October to June.* Vleis, pans, in shallow water or damp places. *Henderson 970.*

W S C N E

Enneapogon P. Beauv. (s. Afr.: 6 spp.) 9903570

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 134–136.

cenchrroides (Roem. & Schult.) C.E. Hubb.

Short-lived perennial or annual, tufted, up to 1 m high, densely glandular-hairy. Leaf blades 30–250 mm long, 3–8 mm wide. Spikelets 3–5 mm long. Panicle branched but contracted, often dense and spikelike, central axis hidden; lemma awns hair-fringed; anthers 1,0–1,5 mm long. *Flowering January to December (usually in summer, but occasionally in winter in the north).* Sandy soils, in disturbed places and overgrazed veld. *Smook 5390.*

W S C N E

desvauxii Beauv.

(= *E. brachystachyum* (Jaub. & Spach) Stapf)

Possibly perennial or annual, densely tufted, up to 300 mm tall, densely glandular-hairy. Leaf blades 25–250 mm long, filiform or up to 7 mm wide. Nodes with a ring of hairs; culms often decumbent. Spikelets 3,0–5,5 mm long. Panicle spike-like, dense, unbranched; lemma awns hair-fringed; anthers 0,2–0,7(–1,2) mm long. *Flowering July to June (usually in summer but*

rarely in winter in the north). Many habitats and soil types, often in overgrazed veld. *Pole-Evans 2066*.

W S C N E

pretoriensis Stent

Perennial, densely tufted, 0,65 m high, wiry. Leaf blades 50–250 mm long, setaceous or up to 3 mm wide. Culms unbranched, bases erect, clad in hard, shiny, yellowish sheaths. Spikelets 5,5–7,0 mm long. Panicle contracted, rarely open, branched; glume tips reddish brown, often shining; lemma awns hair-fringed; anthers 2,5 mm long. *Flowering November to May*. Rocky hillsides, often on northern aspect. *Wasserfall sub PRE 39210*.

W S C N E

scoparius Stapf

(= *E. filifolius* (Pilg.) Stapf ex Garabedian)

Perennial, densely tufted, up to 0,65 m high, wiry, sparsely hairy. Leaf blades 50–200(–250) mm long, filiform or up to 3 mm wide. Culms erect. Spikelets 3,5–4,5 mm long. Panicle dense, spike-like, unbranched; lemma awns hair-fringed; anthers 1,0–2,5 mm long. *Flowering July to June*. Dry grassland and among rocks on hillsides. *Theron 586*.

W S C N E

spathaceus Gooss.

Perennial, short-rhizomatous and tufted (rootstock with hairy cataphylls), up to 0,9 m high, with sparse gland-tipped hairs or nearly glabrous. Leaf blades up to 200 mm long, 3–4 mm wide. Spikelets 6–7 mm long. Panicle open, branched, central axis exposed; lemma awns hair-fringed; anthers 2,5 mm long. *Flowering November to March*. Sandveld. *Fisher & Schweickerdt 543*.

W S C N E

Enteropogon Nees (s. Afr.: 4 spp.) 9903000

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 136–137.

macrostachyus (A. Rich.) Benth.

(= *E. simplex* (Schumach. & Thonn.) A. Chev.)

Perennial, tufted, up to 1,2 m high. Leaf blades 100–600 mm long, 3–7 mm wide. Spikelets 8–10 mm long, 3-flowered; lemma of lower floret 7–10 mm long, awn 10–18 mm long. *Flowering November to June*. Disturbed places or light shade under trees. *Smook 2665*.

W S C N E

monostachyos (Vahl) K. Schum. subsp. africanus Clayton

Perennial, tufted, up to 1 m high. Leaf blades 150–300 mm long, 2–4 mm wide, basal leaf sheaths laterally flattened and strongly keeled. Lemma of lower floret 6–8 mm long with an awn 2,5–8,0 mm long. *Flowering November to April*. Grey granite flats and sandy soil near rivers, often in shade. *Ellis 3243*.

W S C N E

Entolasia Stapf (s. Afr.: 2 spp.) 9901021

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 137–138.

olivacea Stapf

Perennial, rhizomatous, up to 1 m high. Leaf blades 50–100 mm long, 5–15 mm wide, linear-lanceolate, constricted at base, point acutely acuminate. Culms erect, geniculate and branched. Spikelets 2,2–2,5 mm long, 1 mm wide. Inflorescence 70–150 mm long; spikelets dull green; upper glume 2,5 mm long. *Flowering January to March*. In shade, moist places. *Johannsmeier 372*.

W S C N E

Eragrostis Wolf (s. Afr.: 82 spp.) 9902860

Smook. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 139–163.

Key to the species of *Eragrostis*:

- 1a Spikelets disarticulating below glumes and falling entire as a unit *E. superba*
- 1b Spikelets breaking up in various places above glumes at maturity 2
- 2a Palea keels with hairs 0,3–1,3 mm long for most of its length which are usually exerted beyond lemma *E. arenicola*, *E. ciliaris*, *E. hierniana*, *E. lappula*, *E. tenella*, *E. viscosa*
- 2b Palea keels glabrous or scabrid, or ciliate with hairs shorter than 0,3 mm and not exerted beyond lemma 3
- 3a Lemma with distinct elongated dark patches on or next to lateral veins *E. caesia*
- 3b Lemma without distinct elongated dark patches near lateral veins 4
- 4a Spikelets up to 2,1 mm wide 5
- 4b Spikelets up to 2,2 mm and wider 34
- 5a Culms with sticky glandular patches below nodes and on leaf sheaths below collar *E. gumiflua*
- 5b Culms and sheaths eglandular or with nonsticky glandular patches 6
- 6a Plants annual 7
- 6b Plants perennial 13
- 7a Anthers up to 0,5 mm long 8
- 7b Anthers 0,6–1,5 mm long 12
- 8a Spikelets sessile, in wedge-shaped clusters, these coalescent into a spike-like inflorescence *E. patens*
- 8b Spikelets pedicellate or sessile, distant or crowded, or clustered but clusters not wedge-shaped; inflorescence open or contracted 9
- 9a Rhachilla fragile; spikelets breaking up from apex downwards *E. aspera*
- 9b Rhachilla persistent or upper part of rhachilla eventually becoming fragile; spikelets with lemmas and/or paleas breaking up from base upwards (persistent in *E. tef*) 10
- 10a Spikelets up to 1,2 mm wide *E. aethiopica*, *E. biflora*, *E. pilosa*, *E. remotiflora*, *E. tef*, *E. tenuifolia*, *E. virescens*
- 10b Spikelets 1,3–2,1 mm wide 11
- 11a Caryopsis subglobose *E. cilianensis*
- 11b Caryopsis oblong to elliptic *E. barrellieri*, *E. procumbens*, *E. tef*, *E. tenuifolia*

- 12a (7) Lowest lemma obovate-elliptic, 1.0–1.5 mm long, apex truncate to broadly rounded *E. porosa*
 12b Lowest lemma broadly elliptic to broadly oblong-ovate, 1.5–1.7 mm long, apex obtuse to subacute *E. cylindriflora*, *E. glandulosipedata*
- 13a (6) Inflorescence with spikelets directly on main axis or with branches closely appressed to main axis or spreading, but then sparsely branched with only primary branches or very short secondary branches and spikelets appressed to branches 14
 13b Inflorescence moderately to much-branched, branches spreading, spikelets usually spreading 20
- 14a Spikelets reddish brown; anthers 2 *E. chapelieri*
 14b Spikelets various shades and combinations of green, grey, purple or red; anthers 3 15
- 15a Culms wiry and matted *E. volkensii*
 15b Culms not as above 16
- 16a Lateral nerves of lemma reaching to upper margins and usually excurrent into minute mucros, small glandular dots present. Caryopsis subglobose *E. crassinervis*
 16b Lateral nerves of lemma not reaching to upper margins, not excurrent into mucros, eglandular. Caryopsis ovate, elliptic to oblong 17
- 17a Plants loosely tufted or creeping; leaves mainly cauline *E. inamoena*, *E. sarmentosa*
 17b Plants densely tufted 18
- 18a Palea keels flat, usually 0.1 mm or wider *E. nindensis*, *E. pallens*
 18b Palea keels a raised ridge or narrow line to 0.1 mm wide 19
- 19a Glumes membranous to chartaceous *E. curvula*
 19b Glumes cartilaginous *E. racemosa*, *E. sclerantha*
- 20a (13) Spikelets very broadly ovate *E. habrantha*
 20b Spikelets linear to oblong, to ovate or elliptic 21
- 21a Lower glume up to a third the length of lemma above in intact spikelet, upper glume barely reaching to just overlapping base of lemma above *E. plana*, *E. tenuifolia*
 21b Characters not occurring in the above combination 22
- 22a Palea keels thickened, either broad or flat or a prominent ridge along entire length 23
 22b Palea keels thickened into a narrow line or obscure and apparently palea folded only, without any thickening, occasionally keels slightly wider towards base 24
- 23a Palea obovate *E. pallens*
 23b Palea oblanceolate *E. inamoena*, *E. patentissima*
- 24a Palea margins not meeting or overlapping, except occasionally at base 25
 24b Palea margins meeting or overlapping along their entire length or at apex only 28
- 25a Basal sheaths densely covered with woolly hairs *E. sclerantha* subsp. *sclerantha*
 25b Basal sheaths glabrous or with scattered hairs, or densely hairy at very base only, hairs not woolly 26
- 26a Spikelets narrowly elliptic *E. pseudosclerantha*
 26b Spikelets linear-oblong 27
- 27a Culm nodes (those nodes without branches) hairy *E. harbinodis*, *E. lehmanniana* var. *chaunantha*
 27b Culm nodes (those nodes without branches) glabrous *E. curvula*, *E. lehmanniana* var. *lehmanniana*, *E. rigidior*, *E. trichophora*
- 28a Inflorescences with lowest branches whorled, pseudowhorled or clustered around main axis 29
 28b Inflorescences with lowest branches not arranged as above 32
- 29a Basal sheaths densely hairy at base 30
 29b Basal sheaths glabrous or obscurely hairy 32
- 30a Lemmas greyish green to near apex, then yellowish grading into white at margins, often flushed purple below the yellow; inflorescence branches (excluding main axis) thickly covered with minute prickles *E. rotifer*
 30b Lemmas variously coloured, apex the same colour as rest of lemma, or white with yellowish patch absent; inflorescence branches smooth, or if scabrid then prickles large and not densely packed *E. curvula*, *E. trichophora*
- 31a Lemmas strongly keeled, keel prominent and obvious for entire length of lemma *E. acraea*, *E. heteromera*, *E. micrantha*
 31b Lemmas not strongly keeled, keel obscure or only prominent in upper part of lemma *E. planiculmis*, *E. trichophora*
- 32a Leaf blades 5–10 mm wide; glumes opaque, usually rough *E. acraea*
 32b Leaf blades up to 4.5 mm wide; glumes translucent, usually smooth, occasionally scabrous towards apex 33
- 33a Basal sheaths hairy for quite a way up from base, with long hairs especially in deep furrows between prominent ridges formed by the nerves; inflorescence extremely variable *E. curvula*
 33b Basal sheaths glabrous or obscurely hairy or densely hairy only at extreme base, furrows shallow or absent between nerves *E. chloromelas*, *E. heteromera*, *E. micrantha*, *E. planiculmis*
- 34a (4) Spikelets dark olive-green; lemma apex acute, lateral nerves conspicuous; rachilla persistent *E. sclerantha* subsp. *sclerantha*
 34b Spikelets pallid to dark purple; lemma apex broadly obtuse to broadly truncate, lateral nerves conspicuous; rachilla fragile 35
- 35a Plants annual *E. cilianensis*, *E. procumbens*, *E. tenuifolia*, *E. macrochlamys* var. *wilmaniae*
 35b Plants perennial 36
- 36a Palea keels with lower portion very broad and projecting from rest of keel *E. echinochloidea*
 36b Palea keels of variable width, entire, widest part not projecting from rest of keel 37
- 37a Lemma with lateral nerves indistinct *E. lamprospicula*, *E. nindensis*, *E. pseudosclerantha*, *E. racemosa*, *E. volkensii*
 37b Lemma with lateral veins clearly distinct 38
- 38a Lemmas obtuse to subobtusate or rounded *E. capensis*, *E. obtusa*
 38b Lemmas acuminate, acute to subacute, or truncate to concave between keel and lateral nerves which reach margin 39
- 39a Inflorescence with most pedicels more than 3 times the length of spikelets *E. patentissima*
 39b Inflorescence with most pedicels (excluding terminal ones) shorter than or just as long as spikelets *E. acraea*, *E. chapelieri*, *E. crassinervis*, *E. inamoena*, *E. truncata*

acraea De Winter

Robust perennial, densely tufted, up to 2 m high. Leaf blades 200–300(–600) mm long, 5–10 mm wide. Basal sheaths glabrous or obscurely hairy at base. Spikelets 5–7 mm long, 1.5–2.5 mm wide. Inflorescence moderately branched, spreading or contracted, spikelets condensed on branches, most pedicels shorter than spikelets; spikelets oblong to oblong-elliptic, 5–7-flowered, rachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes usually rough, opaque; lemma acute to subacute, strongly keeled, keel prominent for entire length of lemma, lateral nerves prominent; palea long and narrow, keels a thin line, entire, scabrid to smooth, margins touching along entire length and overlapping at apex; anthers 3, 1.2–1.7 mm long. Caryopsis oblong-elliptic. Flowering November to April. Mountainous

areas, often between rocks and in disturbed places. *Codd & Dyer 9074.*

W S C N E

aethiopica Chiov.

Annual, loosely tufted (erect), up to 0,6 m high. Leaf blades 30–200 mm long, 1–3 mm wide. Spikelets 1,7–5,0 mm long, 0,7–1,0 mm wide. Inflorescence delicate, loose, branches and pedicels slender and flexible, axils of branches not bearded, spikelets distant; spikelets linear to oblong, lemmas on same side of rhachilla overlapping lemma above and hardly diminishing in length towards apex of spikelet, rhachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume up to a third the length of lemma above in intact spikelet, weakly keeled; lemma broadly ovate with lateral veins not visible, lowest lemma 0,7–1,0 mm long; palea keels usually smooth; anthers 3, 0,1–0,2 mm long. Caryopsis ellipsoid. *Flowering January to May.* Damp sand or black clay in small vleis, pan edges and riverbeds. *Theron 2955.*

W S C N E

arenicola C.E. Hubb.

Annual, loosely tufted (erect), up to 350 mm tall. Leaf blades up to 100 mm long, up to 4 mm wide. Spikelets 2–4 mm long, 1,0–1,8 mm wide. Inflorescence contracted, dense, branches appressed to main axis, spikelets close to one another, glands if present not sticky; spikelet with rhachilla fragile, lemmas and/or paleas breaking up from apex downwards; lemma keels smooth or scaberulous; palea keels with hairs 0,3–0,6 mm long, which are exerted from lemma; anthers 2 or 3 (number variable in the same inflorescence), 0,3–0,4 mm long. *Flowering April.* Sandy soil in disturbed areas such as cultivated lands and roadsides. *Scheepers 630.*

W S C N E

aspera (Jacq.) Nees

Annual, tufted (erect), up to 0,8 m high. Leaf blades up to 300 mm long, up to 10 mm wide. Spikelets 3–10 mm long, 1,0–1,5 mm wide. Inflorescence open, branches ascending at 45° angles, bearded in axils, pedicels long and slender; spikelet rhachilla fragile, lemmas and/or paleas breaking up from apex downwards; lemma obtuse to truncate; palea keels scabrid; anthers 3, 0,2–0,3 mm long. Caryopsis subglobose. *Flowering February to June.* On sandy soil in dolomite areas and in disturbed places and old cultivated areas. *De Winter 96.*

W S C N E

barbinodis Hack.

Perennial, stoloniferous and tufted, culms to 1 m long, geniculate to decumbent, often rooting at nodes. Leaf blades 100(–150) mm long, 2–6 mm wide. Culm nodes (without branches at nodes) with long spreading hairs. Spikelets to 7 mm long, 1,2–1,5 mm wide. Inflorescence open, branches spreading, lowest branches not whorled; spikelets linear to oblong, rhachilla persistent, sometimes becoming fragile, lemmas and paleas break-

ing up from base upwards; glumes half to three-quarters the length of lemmas directly above in intact spikelet; palea margins wide apart, not touching, keels a narrow line, scaberulous; anthers 3, 0,8–1,0 mm long. *Flowering December to May.* Red sandy loam, gritty to sandy soils and black turf. *Smook 5299.*

W S C N E

barrelieri Dav.*

Annual, laxly tufted (erect to geniculate), up to 300 mm tall. Leaf blades up to 100 mm long, up to 3,5 mm wide. Spikelets 5–15 mm long, 1,5–1,8 mm wide. Inflorescence open, primary branches usually not longer than 40 mm, spreading, pedicels stout; spikelet rhachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes unequal; lemma obtuse; palea keels scabrid; anthers 3, 0,2–0,3 mm long. Caryopsis oblong-elliptic. *Flowering December to January.* On sand in disturbed areas such as road verges and in gardens. Native to southern Europe. *De Winter 267.*

W S C N E

bicolor Nees

Perennial, usually a hydrophyte, tufted (densely) or rhizomatous (rhizome oblique), up to 0,6 m high. Leaf blades up to 200 mm long, up to 1,5 mm wide. Leaves mainly basal, flat, usually glaucous. Spikelets to 8 mm long, 1–2 mm wide. Inflorescence open, lax, branches and spikelets spreading, lowest branches solitary or 2 or 3, not whorled; spikelets linear to narrowly oblong, rhachilla persistent or upper part fragile and florets breaking off in groups; glumes half to two-thirds the length of lemmas above them in intact spikelet; lemmas deep purple or violet with a yellowish apex, sometimes mostly yellowish but always bicoloured; palea margins very close for entire length, just touching to overlapping at apex, keels a thin line, entire, smooth or scaberulous; anthers 3, 0–1,2 mm long. *Flowering October to May.* Often in brack areas, in water or on wet soil around seasonal pans, and in dry riverbeds. *Jeffers 370.*

W S C N E

biflora Hack. ex Schinz

Annual, tufted, up to 0,7 m high. Leaf blades up to 300 mm long, up to 8 mm wide. Spikelets 1,5–2,5 mm long, 0,5–1,2 mm wide. Inflorescence open, delicate, much-branched, pedicels long and slender; spikelets narrowly elliptic when young to broadly ovate when mature, with 1–2(–3) florets, rhachilla persistent, becoming fragile in upper part, lemmas and/or paleas breaking up from base upwards; lemma 1,0–1,5 mm long; palea keels glabrous to scabrid; anthers 3, 0,2–0,3 mm long. *Flowering September to May.* Moist disturbed areas, especially under trees. *Smook 2645.*

W S C N E

caesia Stapf

Perennial, densely tufted, up to 0,6 m high. Leaf blades up to 200 mm long, up to 3 mm wide. Spikelets 4–7 mm long, 1,5–2,4 mm wide. Inflorescence dense and contracted, branches usually appressed to main axis,

occasionally spreading; spikelets tardily breaking up between florets; lemma with distinct elongated black patches along lateral nerves; palea keels with hairs shorter than 0,1 mm; anthers 3, 1,0–1,3 mm long. *Flowering November to June*. Moist areas on shallow soil, cave sandstone, and seepage areas in mountainous grassland. *Kluge 1965*.

W S C N E

capensis (Thunb.) Trin.

Perennial, tufted, up to 0,9 m high. Leaf blades 70–350 mm long, 2–5 mm wide. Basal sheaths glabrous to hairy but not woolly-hairy at base; leaves mainly basal. Spikelets 3,5–15,0 mm long, 3–7 mm wide. Inflorescence sparsely branched or unbranched, spikelets appressed to main axis or branches; spikelets plump, with opposite row of florets overlapping and closely packed with rachilla not visible, with rachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma obtuse to subobtusate, dull and granular, greenish to greenish brown, strongly flushed with purple, lateral nerves distinct; palea narrowly obovate, keels entire, membranous to subcartilaginous between keel and margins, margins nearly touching to touching in lower parts to widely separated in upper parts; anthers 3, 1–2 mm long. Caryopsis elliptic. *Flowering September to April*. Sandy to clayey soils in moist areas on slopes, rocky and disturbed places. *Kluge 1119, Huntley 992*.

W S C N E

chapelieri (Kunth) Nees

Perennial, erect and densely tufted, up to 0,9 m high. Leaf blades up to 400 mm long, up to 5 mm wide. Basal sheaths glabrous to obscurely hairy at base. Spikelets 6–24 mm long, 2,0–2,5 mm wide. Inflorescence narrow, dense, branches appressed to main axis and overlapping but often distant in lower part; spikelets usually reddish brown, rachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma acute-acuminate, lateral nerves distinct but not raised; palea nearly the same width between keel and margins throughout, narrowing upwards and running into keel near apex, margins not touching, at least not in upper part, keels entire, broad and flattened; anthers 2, 0,3–0,7 mm long. Caryopsis broadly ellipsoid. *Flowering March to August*. Poor sandy soils or occasionally on clays, in disturbed areas such as old lands and pathsides. *Codd 5456*.

W S C N E

chloromelas Steud.

Perennial, tufted, up to 0,8 m high. Leaf blades up to 300 mm long, setaceous. Culms strongly compacted and not easily separated individually, nodes glabrous; basal sheaths glabrous or obscurely hairy at very base; leaf blades tapering to very long filiform tips, very curly especially when older. Spikelets 4–6 mm long, 1,0–1,5 mm wide. Inflorescence open and much-branched, branches and pedicels spreading, long hairs in axils, lowest branches usually solitary, never whor-

led; spikelets narrowly obovate to oblong, pale greenish grey to dark green, rachilla persistent in lower part, usually becoming fragile in upper part, lemmas and/or paleas breaking up from base upwards; glumes translucent, usually smooth, longer than a third the length of lemmas directly above; palea margins nearly touching to touching along entire length of palea; anthers 3, 0,6–0,8 mm long. Caryopsis ellipsoid. *Flowering December to May*. On hillsides, rocky ridges or in disturbed areas on sandy soil, loam and often dolomite. *De Winter 626, Du Toit 181*.

W S C N E

cilianensis (All.) F.T. Hubb.

Annual, loosely tufted (often geniculate), up to 0,9 m high. Leaf blades up to 250 mm long, up to 10 mm wide. Basal sheaths glabrous, if hairy not densely woolly-hairy. Spikelets 3–20 mm long, 1,5–4,0 mm wide. Inflorescence with side branches usually 40 mm or shorter, spreading to appressed near apex of inflorescence, branches and pedicels stout; spikelets narrowly ovate to narrowly oblong, rachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma narrowly to broadly obtuse in profile, 1,7–2,8 mm long; palea keels entire, scabrid; anthers 3, 0,2–0,3 mm long. *Flowering October to June*. Sandy soils, often in moist places, also disturbed areas such as cultivated lands, pathsides and overgrazed places. *Du Toit 949*.

W S C N E

ciliaris (L.) R. Br.

Annual, tufted (erect), up to 0,6 m high. Leaf blades up to 120 mm long, up to 5 mm wide. Spikelets 2,0–4,5 mm long, 1,5–2,2 mm wide. Inflorescence contracted, often interrupted, spikelets densely clustered; spikelets usually flushed with purple, rachilla fragile, breaking up from apex downwards; lemma keels (at least upper ones in spikelets) with stiff hairs 0,2–0,4 mm long, especially towards base; palea keels with hairs 0,5–0,7 mm long, which are exerted from lemma; anthers 2, 0,20–0,25 mm long. *Flowering January to December*. Moist sandy soils in disturbed places such as human habitation, cultivated lands, overgrazed and trodden places. *Scheepers 894*.

W S C N E

crassinervis Hack.

Perennial, occasionally a hydrophyte and stoloniferous, densely tufted, up to 0,6 m high. Leaf blades up to 100 mm long, 2,5 mm wide. Spikelets 4,5–8,0 (–15,0) mm long, 2–3 mm wide. Inflorescence narrow, unbranched or only sparsely branched, spikelets appressed to main axis or branches, pedicels short and stout. Spikelets light green to straw-coloured or purple or at least flushed with purple. Rachilla persistent. Lemmas and/or paleas breaking up from base upwards; lemma usually truncate to concave between keel and lateral nerves, which are raised and excurrent into minute mucros and have small glandular pits. Palea moderately wide between margins and keels, margins not touching, keels entire, flattened, equally broad for entire length. Anthers 3, 0,4–0,6 mm long. Caryopsis

subglobose. *Flowering January to April*. River and streambanks. *Bredenkamp & Van Vuuren 308*.

W S C N E

curvula (*Schrad.*) *Nees*

(= *E. robusta* Stent)

Wiry perennial, erect and densely tufted, up to 1,2 m high. Leaf blades up to 500 mm long, up to 3 mm wide. Plants variable, culms unbranched, not easily compressed, nodes glabrous; basal sheaths densely hairy for quite a way up from base, with long hairs in deep furrows between prominent, squarish ridges formed by closely packed nerves; leaf blades rolled or flat, appearing setaceous, with long tapering, filiform tips. Spikelets 4–10 mm long, 1,0–1,5 mm wide. Inflorescence much-branched, variable, being open and spreading, or contracted with branches appressed to main axis, lowest branches whorled or not whorled, pedicels smooth or with prickles distant from one another, spikelets appressed to branches; spikelets linear to oblong, rhachilla persistent or upper part often fragile, lemmas and/or paleas breaking up from base upwards; glumes translucent, of variable length but longer than a third the length of lemmas above in intact spikelet, smooth or scaberulous at apex and along keels; lemma pale green to dark green to greyish; palea margins meeting or overlapping for entire length, keels a thin narrow line or palea apparently only folded; anthers 3, 0,6–1,0 mm long. Caryopsis ellipsoid. *Flowering August to June*. In high rainfall areas on sandy or acid to loamy soils, often in disturbed or badly managed areas. *Balsinhas 3441*.

W S C N E

cylindriflora *Hochst.*

(= *E. horizontalis* Peter)

Annual, loosely tufted (usually erect), up to 0,8 m high. Leaf blades 30–150 mm long, 2–4 mm wide. Leaf sheaths nearly always dotted with oblong glands. Spikelets 3–8 mm long, 0,5–1,5 mm wide. Inflorescences with lowest branches whorled; spikelet with rhachilla persistent in lower part and fragile above, lemmas and/or paleas breaking up from base upwards; lower glume four-fifths as long as to longer than lemma above in intact spikelet; lowest lemma 1,5–1,7 mm long, chartaceous to membranous, broadly elliptic, obtuse to subacute, lateral nerves obscure; palea keels minutely scaberulous; anthers 3, 0,8–1,0 mm long. Caryopsis ellipsoid. *Flowering January to August*. Sand, clayey loam or black turf in riverbeds, depressions and in disturbed areas such as overgrazed places. *De Winter 2284, Huntley 1024*.

W S C N E

echinochloidea *Stapf*

Perennial, tufted (erect or geniculate), up to 0,9 m high. Leaf blades up to 500 mm long, up to 6 mm wide. Basal sheaths glabrous or long-hairy at extreme base only. Spikelets 2–6 mm long, 2,2–3,5 mm wide. Inflorescence sparsely branched, spikelets densely congested and secund on branches, pedicels short and stout; spikelet rhachilla very fragile, easily disarticulating

between florets from apex downwards; lower glume acuminate; palea acute, keels scaberulous, with lower portion very broad and projecting from upper portion, top of broad portion ends in deep notch or tooth; anthers 3, 0,5–0,7 mm long. Caryopsis elliptic. *Flowering November to May*. Prefers shallow moist calcrete soils especially around pans, also disturbed sandy places such as cultivated lands. *De Winter 2217*.

W S C N E

glandulosipedata *De Winter*

Annual, tufted (geniculate), up to 1 m high. Leaf blades up to 300 mm long, up to 5,5 mm wide. Spikelets 3–5 mm long, 1,0–1,8 mm wide. Inflorescence with lowest branches whorled; spikelets with rhachilla persistent, sometimes fragile in upper part, lemmas and/or paleas breaking up from base upwards; lowest lemma broadly elliptic to broadly oblong-ovate, obtuse to subacute, 1,5–1,7 mm long, lateral nerves conspicuous; palea keels scaberulous; anthers 3, 0,8–1,0 mm long. Caryopsis oblong to broadly oblong. *Flowering February to June*. Sand, gravel, turf and calcareous soils and in areas of high moisture and disturbance. *De Winter 2290*.

W S C N E

gummiflua *Nees*

Perennial, densely tufted, up to 0,9 m high. Leaf blades up to 500 mm long, up to 4,5 mm wide. Culms with sticky glandular patches below nodes and on leaf sheaths below collar, noticeable because of soil particles adhering to the patches. Spikelets 2,5–4,0 mm long, 1,0–1,8 mm wide; spikelet rhachilla fragile, lemmas and/or paleas breaking up from apex downwards; palea keels scaberulous; anthers 3, 0,5–0,8 mm long. Caryopsis oblong-elliptic. *Flowering September to April*. Grassland, bushveld, woodland, in rocky or sandy soil. *Smook 4292*.

W S C N E

habrantha *Rendle*

Perennial, tufted (erect), up to 1 m high. Leaf blades up to 100 mm long, up to 5 mm wide. Spikelets 1–2 mm long, up to 1,2 mm wide. Inflorescence linear, delicate, much-branched, branches fine and flexible; mature spikelets very broadly ovate, 2- or 3-flowered, rhachilla subsistent, fragile in upper part, lowest floret persistent; palea keels smooth to scaberulous; anthers 3, 0,6–0,8 mm long. *Flowering January to May*. Sandy and clayey soils in open damp areas along rivers and around vleis. *Van der Schijff 2550*.

W S C N E

heteromera *Stapf*

Moderately slender perennial, tufted (erect), up to 1 m high. Leaf blades up to 150 mm long, 2–4 mm wide. Culms not densely compacted at base and easily separable, nodes glabrous; basal sheaths glabrous or obscurely hairy; leaf blades long-tapering at tip. Spikelets 4–9 mm long, up to 1,5 mm wide. Inflorescence open, moderately branched, lowest branches 1–8, whorled or

not whorled, spikelets appressed to branches, pedicels (except terminal ones) shorter than or as long as spikelets; spikelets linear to oblong, rachilla persistent, lemmas and paleas breaking up from base upwards; glumes translucent, smooth or scaberulous on keels and apex, a third to three-quarters the length of lemmas directly above in intact spikelet; lemma purple to violet to green, often with yellow especially near apex, nerves usually prominent, strongly keeled with keel prominent along entire length; palea margins meeting or overlapping along entire length, keels distinct but a narrow line; anthers 3, 0.8–1.0 mm long. Caryopsis narrowly oblong. *Flowering December to May*. On moist sand or black clay in depressions, seasonal pan margins and in disturbed areas. *De Winter & Codd 498*.

W S C N E

hierniana Rendle

(= *E. uniglumis* Hack.)

Perennial, tufted (sometimes geniculate), up to 1 m high. Leaf blades 100–250 mm long, 2–4 mm wide. Spikelets 5–12 mm long, 1.0–2.5 mm wide, with rachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma glabrous or with hairs shorter than 0.3 mm; palea keels with hairs 0.3–2.0 mm long, extending beyond lemma; anthers 3, 0.8–1.2 mm long. *Flowering August to April*. Moist sandy soils in hollows on hills, along rivers and in disturbed areas such as old cultivated lands. *Godfrey & Acocks SH1601*.

W S C N E

homomalla Nees

(= *E. hygrophila* C.E. Hubb. & Schweick.)

Annual, tufted (erect to decumbent), up to 500 mm tall. Leaf blades 20–100 mm long, 1–4 mm wide. Spikelets 2–7 mm long, 0.7–1.0 mm wide. Inflorescence heavy, branches spreading or appressed to main axis, rigid, spikelets irregularly and densely condensed along primary branches, pedicels stout; spikelets linear to oblong, lemmas on same side of rachilla distinctly overlapping lemma above, rachilla subpersistent, lemmas and/or paleas breaking up from base upwards; lower glume up to a third the length of lemma above in intact spikelet; lemma ovate-elliptic, 1.0–1.5 mm long; palea keels smooth to scabrid; anthers 3, 0.3 mm long. Caryopsis ellipsoid. *Flowering January to May*. Moist, sandy loam or clay in brackish depressions or seasonally wet pans. *Louw 2002*.

W S C N E

inamoena K. Schum.

(= *E. atrovirens* auctt., non Trin. ex Steud.)

Perennial, loosely tufted and rhizomatous (rhizome short and oblique to long and branched), up to 1 m high. Leaf blades 40–250 mm long, 2–4 mm wide. Basal sheaths glabrous at base; leaves mainly cauline. Spikelets 5–20 mm long, 2.0–3.5 mm wide. Inflorescence 50–200 mm long, variable, grading from open with spreading branches to contracted with branches overlapping one another and appressed to main axis, pedicels (except terminal ones) shorter than, or as long as spikelets; spikelets dull, greyish green to dark green,

frequently flushed with purple, 7–40-flowered, lemmas hardly becoming shorter towards apex, rachilla persistent, lemmas and/or paleas breaking up from base upwards; upper glume acute; lowest lemma 1.6–2.5 mm long, acute, lateral nerves distinct; palea narrowly obovate, membranous except for keel, apex truncate to obtuse, margins nearly touching to touching along entire length, keels narrow, flat, but distinct, entire, scaberulous; anthers 3, 0.6–1.3 mm long. Caryopsis narrowly elliptic. *Flowering November to May*. Sandy to organically rich soils on seasonally flooded areas and marshy places. *Smook 3144*.

W S C N E

lamprospicula De Winter

Perennial, tufted (geniculate), up to 0.8 m high. Leaf blades up to 100 mm long, up to 3 mm wide. Plants not sprawling; basal sheaths glabrous; leaves not forming a dense basal tuft. Spikelets 5–15 mm long, 2.2–3.5 mm wide. Inflorescence 80–100 mm long; spikelets greyish yellow, rachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume lanceolate; lemma with lateral nerves indistinct; palea keels entire; anthers 3, 0.9–1.2 mm long. Caryopsis ovate. *Flowering January*. Open places on brackish flats. *De Winter 734*.

W S C N E

lappula Nees

Perennial, shortly rhizomatous and tufted (densely, erect), up to 1.2 m high. Leaf blades up to 250 mm long, 2–4 mm wide. Spikelets 5–10 mm long, 1.9–4.0 mm wide, with rachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma with hairs 0.3–1.2 mm long on lateral nerves and sometimes on median keel; palea keels with hairs 0.3–1.2 mm long which extend beyond lemma; anthers 3, 1.2 mm long. *Flowering December to May*. Moist sandy soils of annually flooded areas and riverbeds. *Smook 2701*.

W S C N E

lehmanniana Nees var. lehmanniana

Perennial, tufted (erect, geniculate, sometimes rooting at lower nodes), up to 0.6 m high. Leaf blades up to 100 mm long, 1.5–2.8 mm wide. Culm nodes (those without branches) glabrous; basal sheaths papery, nerves round, not close together or forming prominent ridges, glabrous or slightly hairy at extreme base only; leaf blades gradually narrowing to apex. Spikelets 4–8 mm long, 1.0–1.5 mm wide, linear to oblong, dark green, grey-green to red with yellow, rachilla subpersistent, fragile in upper portion; glumes half to two-thirds the length of lemmas directly above in intact spikelet; palea margins wide apart, keels thin and narrow, glabrous or scaberulous; anthers 3, 0.7 mm long. Caryopsis oblong. *Flowering November to June*. Sand or sandy loam usually over limestone, in disturbed areas. *Smook 4253 & 4155*.

W S C N E

lehmanniana Nees var. chaunantha (Pilg.) De Winter

Perennial; tufted (erect); up to 0.6 m high. Leaf blades up to 250 mm long, 1.5–2.0 mm wide. Culm nodes and

internodes hairy. Spikelets 4–8 mm long, up to 1 mm wide. Inflorescence open, lax, spikelets linear to oblong, rhachilla subsistent, usually fragile in upper part; glumes a third to half the length of lemmas directly above intact spikelet; palea margins wide apart (except sometimes at base), keels a narrow thin line, scaberulous; anthers 3, 1.0 mm long. Caryopsis oblong. *Flowering December to April*. Kalahari sand. *Gubb 246/18*.

W S C N E

macrochlamys Pilg. var. **wilmaniae** (C.E. Hubb. & Schweick.) De Winter

Annual; tufted (erect to geniculate to procumbent); to 300 mm tall. Leaf blades up to 150 mm long, 2.5 mm wide. Basal sheaths glabrous or with scattered hairs. Spikelets 4–5 mm long, 3–4 mm wide. Inflorescence branches usually appressed to main axis, spikelets many and usually densely crowded; spikelets broadly oblong to broadly ovate, rhachilla fragile, breaking up from apex downwards; glumes four-fifths to two-thirds the length of lemmas directly above intact spikelet, eglandular; lemma acute to subacute (in profile); palea keels entire, scabrid; anthers 3, 0.2–0.4 mm long. Caryopsis oblong-lanceolate to oblong-elliptic. *Flowering February to April*. Moist areas in disturbed places and on calcareous soils especially around pans. *Henrici 32*.

W S C N E

micrantha Hack.

Weak perennial, tufted (erect), up to 1 m high. Leaf blades up to 600 mm long, up to 3 mm wide. Culms not densely compacted at base and easily separated into individual culms; basal sheaths glabrous; leaf blades tapering to a filiform tip. Spikelets 2–4 mm long, up to 1.2 mm wide. Inflorescence 100–300 mm long, effuse, much-branched, branches and spikelets spreading, shortest pedicel of spikelet pair as long as or longer than spikelet; spikelets with rhachilla persistent in lower portion, usually fragile in upper portion, lemmas and/or paleas breaking up from base upwards; glumes translucent, smooth or scaberulous around apex and along keel, half to two-thirds the length of lemmas directly above in intact spikelet; lemma light greenish to green-grey, strongly keeled along entire length; palea margins meeting or overlapping along entire length or at least at apex, keels a thin line or apparently palea only folded; anthers 3, 0.6–1.0 mm long. Caryopsis lanceolate. *Flowering January to May*. Sands, loams and calcareous soils in disturbed areas and moist places around vleis and pans, in semishade. *Schweickhardt 1743*.

W S C N E

minor Host*

(= *E. poaeoides* P. Beauv. ex Roem. & Schult.)

Annual, loosely tufted (often geniculate), up to 0.6 m high. Leaf blades up to 120 mm long, up to 5 mm wide. Leaf margins with raised glands. Spikelets 3–19 mm long, 1.3–2.0 mm wide. Inflorescence open, side branches usually shorter than 40 mm, pedicels stout; spikelet with rhachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes subequal; lemma obtuse; palea keels scabrid; anthers 3, 0.3 mm long. Caryopsis broadly oblong. *Flowering November*.

Disturbed and weedy places. Native to southern Europe. *Smith 6166*.

W S C N E

nindensis Ficalho & Hiern

(= *E. denudata* Hack. ex Schinz)

Slender perennial, densely tufted, up to 0.9 m high. Leaf blades 50–300 mm long, 2–3 mm wide. Culms to 2 mm wide; basal sheaths glabrous or hairy, but not densely woolly-hairy; leaves mainly forming a basal tuft. Spikelets 4–20 mm long, 1.5–4.0 mm wide. Inflorescence sparsely branched, spikelets solitary or in clusters subsessile on main axis or side branches; spikelets yellowish green with a serrated outline, rhachilla fragile, breaking up from apex downwards; lower glume ovate; lowest lemma 2–3 mm long, acute to acuminate, lateral nerves indistinct and not reaching margin; palea keels entire, flat, winged and scabrid; anthers 3, 1.0–1.4 mm long. Caryopsis ellipsoid. *Flowering October to June*. Prefers bare exposed areas and stony sandy soils. *Smook 4160*.

W S C N E

obtusa Munro ex Ficalho & Hiern

Perennial, tufted (geniculate), up to 400 mm tall. Leaf blades up to 150 mm long, up to 4.5 mm wide. Basal sheaths glabrous or hairy but not woolly-hairy at base. Spikelets 3–5 mm long, 3–4 mm wide. Inflorescence open and lax to somewhat contracted; spikelets pallid, green to dark grey, broadly ovate to oblong, rhachilla extremely fragile, breaking up from apex downwards; lemma obtuse to rounded, lateral nerves distinct; palea broadly elliptic to round, keels entire, shortly ciliate; anthers 3, 0.8–1.3 mm long. Caryopsis broadly elliptic. *Flowering July to June*. Sandy or limestone soils in disturbed places such as roadsides and overgrazed areas. *Smook 6241*.

W S C N E

pallens Hack.

Robust perennial, densely tufted (plants with stolons collected at Mkuzi Game Reserve, KwaZulu-Natal), up to 2 m high. Leaf blades up to 1000 mm long, up to 8 mm wide. Culms erect, 2–4 mm wide; leaves mainly basal. Spikelets 5–15 (–25) mm long, 1.5–2.0 mm wide. Inflorescence variable, open with branches spreading or grading to contracted with branches appressed to main axis; spikelets glossy, greenish grey to yellowish, rhachilla fragile, breaking up from apex downwards, upper portion sometimes breaking off as a whole; lowest lemma 1.4–2.0 mm long, broadly obtuse, lateral nerves obscure; palea obovate, usually protruding from lemma, keels broad and flat, scabrid; anthers 3, 1.2 mm long. *Flowering December to May*. Sandy soils, especially with a high moisture content such as around seasonal pans. *Smook 4262*.

W S C N E

patens Oliv.

Annual, tufted (erect to procumbent), up to 400 mm tall. Leaf blades 30–100 mm long, 2–3 mm wide. Spikelets 7–40 mm long, 1.0–1.5 mm wide. Inflorescence spike-like, with spikelets in wedge-shaped clus-

ters; spikelets with rhachilla becoming fragile soon after lower lemmas start to fall, lemmas and/or paleas breaking up from base upwards; lemma with a mucro or awn to 0,5 mm long, lateral nerves not awned or mucronate; palea keels with hairs to 0,2 mm long; anthers 3, 0,1–0,2 mm long. *Flowering February to June*. In disturbed places such as paths and overgrazed veld, usually on sandy soils but also recorded on dolerite and clayey loams. *Dahlstrand 881*.

W S C N E

patentissima Hack.

Perennial, rhizomatous (rhizomes stout) or tufted (geniculate at base), up to 0,7 m high. Leaf blades up to 250 mm long, up to 4 mm wide. Basal sheaths glabrous at base. Spikelets 6–8(–15) mm long, 1,5–3,0 mm wide. Inflorescence ovate to orbicular, branches fairly rigid, spreading, pedicels 3 times the length of spikelets, spreading; spikelets grey-green, rhachilla persistent, becoming fragile in upper portion; lemma acuminate, lateral nerves distinct; palea oblanceolate, thick-textured, apex acute to subacute, keels entire, forming a prominent ridge, shortly ciliolate; anthers 3, 0,8–1,0 mm long. Caryopsis elliptic. *Flowering November to March*. Sandy to loamy soils of open areas in damp places and disturbed areas. *Smook 4877*.

W S C N E

pilosa (L.) P. Beauv.

Annual, loosely tufted (erect, occasionally geniculate), up to 0,7 m high. Leaf blades 20–200 mm long, 1–4 mm wide. Spikelets 3–7 mm long, 0,7–1,2 mm wide. Inflorescence delicate, open, branches and pedicels slender and usually flexible, spikelets distant, axils of branches bearded; spikelets linear to oblong, lemmas on same side of rhachilla distinctly overlapping lemma above, lemmas becoming conspicuously shorter towards apex of spikelet, with rhachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume up to a third the length of lemma above in intact spikelet, weakly keeled; lemma broadly ovate, lateral veins visible, lowest lemma 1,0–1,6 mm long; palea keels glabrous to scabrid; anthers 3, 0,2–0,3 mm long. Caryopsis ellipsoid. *Flowering October to May*. Sandy soils in wet areas such as pan edges, vleis and riverbanks, disturbed places, often in shade. *Zambatis 892*.

W S C N E

plana Nees

Perennial, densely tufted, up to 1 m high. Leaf blades up to 800 mm long, up to 4 mm wide. Basal sheaths strongly compressed, smooth and shiny. Spikelets 6–10 mm long, 0,5–2,0 mm wide. Inflorescence branches usually spreading, spikelets appressed to branches; spikelets linear-oblong, with rhachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume scale-like, reaching up to a third the length of lemma above and upper glume barely reaching or just touching base of lemma above in intact spikelet; lemmas with lateral nerves prominent and with glandular dots; palea keels entire, glabrous to scabrid, glandular dots present or absent; anthers 3, 1,6–2,0 mm long. Caryopsis oblong. *Flowering November to May*. In

high rainfall regions in waterlogged, overgrazed, burnt or disturbed areas. In dry areas it favours wet soils around vleis and rivers. *Smook 4125, Hanekom 2252*.

W S C N E

planiculmis Nees

(= *E. nebulosa* Stapf)

Perennial, tufted (erect), up to 1,2 m high. Leaf blades setaceous, up to 0,9 m long, up to 1,5 mm wide. Base with culms densely and strongly compacted, not easily separated, nodes glabrous; basal sheaths glabrous, inner sheaths often yellow; leaves mainly in a dense basal tuft, leaf blades long-tapering at apex, straight or drooping. Spikelets to 8 mm long, 0,5–2,0 mm wide. Inflorescence 100–700 mm long, open, much-branched, lowest branches whorled or not whorled, pedicels long; spikelets linear, 5–11-flowered, rhachilla persistent in lower portion, fragile in upper part, lemmas and paleas breaking up from base upwards; glumes translucent, smooth or scaberulous around apex and along keels, lower glume up to three-quarters the length of lemma above in intact spikelet; lemma dark green to greenish grey, not strongly keeled, keel obscure in lower part; palea margin nearly touching to touching along entire length, overlapping at apex, keel a narrow line; anthers 3, 0,6–1,2 mm long. *Flowering November to April*. Clay or dolerite soils in depressions, vlei margins and disturbed areas. *Smook 4148*.

W S C N E

porosa Nees

Annual, loosely tufted (usually erect), up to 0,8 m high. Leaf blades 40–150 mm long, 2–5 mm wide. Leaf sheaths densely pilose with bulbous-based hairs. Inflorescence with lowest branches whorled; Spikelets 3–5 mm long, 1,0–1,5 mm wide, with rhachilla persistent in lower part, fragile above, lemmas and/or paleas breaking up from base upwards; lowest lemma obovate-elliptic, truncate to broadly rounded, 1,0–1,5 mm long; palea keels minutely scaberulous; anthers 3, 0,6–0,9 mm long; caryopsis ellipsoid. *Flowering January to July*. Stony or sandy soils often on limestone around rivers and pans, also in disturbed areas. *De Winter & Codd 284, Smook 4242*.

W S C N E

procumbens Nees

Annual, tufted (geniculate or procumbent), up to 500 mm tall. Leaf blades up to 200 mm long, up to 3,5 mm wide. Basal sheath glabrous or hairy, but not with woolly hairs. Spikelets $\pm$ 7 mm long, (1,7–)2,0–2,5 mm wide. Inflorescence with side branches usually appressed to main axis, though lower branches sometimes spreading, with many spikelets densely congested and appressed to branches; spikelets oblong to elliptic, rhachilla persistent, sometimes becoming fragile in upper part, lemmas and/or paleas breaking up from base upwards; glumes shorter than lemmas directly above in intact spikelet; lemmas acute (1,7–)2,0–2,5 mm long, with a minute mucro present or absent; palea keels entire, scabrid; anthers 3, 0,2–0,3 mm long. Caryopsis oblong. *Flowering October to June*. Moist gravel

or sandy soils in depressions, along watercourses and disturbed areas. *Lambinon 26*.

W S C N E

pseudosclerantha *Chiov.*

Short-lived perennial, sometimes stoloniferous (geniculate, rooting at nodes), up to 400 mm tall. Leaf blades up to 90 mm long, up to 4,5 mm wide. Plants sprawling; leaves mainly from a dense basal tuft. Spikelets 4–10 mm long, 2–3 mm wide. Inflorescence to 75 mm long; spikelets narrowly elliptic, greyish green, rachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume lanceolate, up to half length of lemma directly above and upper glume half to two-thirds the length of lemma above in intact spikelet; lemma with lateral nerves indistinct; palea narrow between keel and margins, margins far apart, keels a narrow line, entire, scabrid; anthers 3, 0,8–1,0 mm long. Caryopsis ellipsoid. *Flowering September to April*. Stony ground in open places in short grassland or under trees, in disturbed places and along roadsides. *Bredenkamp & Van Vuuren 57*.

W S C N E

racemosa (*Thunb.*) *Steud.*

(= *E. chalcantha* Trin.)

Perennial, densely tufted (leaves mainly basal), up to 0,8 m high. Leaf blades 60–100 mm long, 2–5 mm wide. Basal sheaths glabrous or thinly silky-hairy. Spikelets 3–10 mm long, 1,5–4,5 mm wide. Inflorescence open or contracted, sparsely branched, secondary branches present or absent, primary branches stiff, with 2–4 spikelets on short stout pedicels; spikelets dark greenish grey, olive or brownish grey, outline usually smooth, rachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes cartilaginous, ovate, boat-shaped; lemma with lateral nerves indistinct; palea keels a narrow ridge, entire, scabrous; anthers 3, 1,0–1,6 mm long. Caryopsis almost square. *Flowering August to May*. On shallow sandy, stony or clayey soils. *Kluge 1098*.

W S C N E

remotiflora *De Winter*

Weak perennial or annual, tufted (erect or with some culms geniculate), up to 0,6 m tall. Leaf blades up to 250 mm long, up to 2,5 mm wide. Spikelets to 5 mm long, up to 1 mm wide. Inflorescence open, branches spreading, pedicels slender; spikelets oblong to linear, lemmas on same side of rachilla either not or just overlapping the one above, rachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume less than a third the length of lemma above in intact spikelet, weakly keeled; lemma 1,0–1,8 mm long; palea keels scabrid to glabrous; anthers 3, 0,2–0,3 mm long. Caryopsis oblong. *Flowering January to April*. Wet and damp areas in pans, vleis and river floodplains, also disturbed areas in semi-arid regions. *Smook 4417 & 6231*.

W S C N E

rigidior *Pilg.*

Perennial, loosely tufted (erect to geniculate), up to 1 m high. Leaf blades up to 200 mm long, up to 5 mm wide. Unbranched culm nodes glabrous; basal sheaths papery, nerves rounded and well apart, glabrous to slightly hairy at very base only; leaf blades narrowing abruptly into a long tapering apex, curly when dry. Spikelets 3,5–7,0 mm long, 1,0–1,5 mm wide. Inflorescence open, branches spreading, lowest branches usually whorled, spikelets usually contracted along branches; spikelets linear to oblong, rachilla fragile in upper portion, lemmas and/or paleas breaking up from base upwards; lower glume four-fifths to longer than lemma directly above and upper glume half to three-quarters length of lemma directly above in intact spikelet; palea margins wide apart except at base and occasionally touching at apex, keels a thin line, smooth to scabrous; anthers 3, 0,8–1,2 mm long. *Flowering September to May*. Sand, loam, humus loam or calcrete soils in open patches, disturbed areas and old cultivation sites. *Smook 4364 & 7414*.

W S C N E

rotifer *Rendle*

(= *E. margaritacea* Stapf)

Perennial, tufted (erect, occasionally decumbent), up to 1,5 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Basal sheaths densely hairy at base. Spikelets 4–10 mm long, up to 1 mm wide. Inflorescence open, branches spreading, lowest branches whorled, branches and pedicels densely covered with prickles giving a greenish white appearance, spikelets contracted to branches; spikelets linear to oblong, rachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes half to two-thirds the length of lemmas directly above in intact spikelet; lemma greyish green usually flushed purple in upper portion above which is a yellow portion, and apex with a white membranous margin; palea margins touching to overlapping at apex, keels a obscure line, smooth or scabrous; anthers 3, 0,5–0,8 mm long. Caryopsis ellipsoid. *Flowering November to July*. Mainly sandy soils in moist areas like vleis, pan edges and riverbeds, also disturbed areas. *Hanekom 1708*.

W S C N E

sarmentosa (*Thunb.*) *Trin.*

Mat-forming perennial, short rhizomatous and tufted (culms occasionally geniculate, decumbent and rooting at nodes), up to 400 mm tall. Leaf blades up to 100 mm long, up to 4,5 mm wide. Leaves mainly cauline. Spikelets 3–7 mm long, 1,5–1,7 mm wide. Inflorescence narrow and contracted, branches appressed to main axis, pedicels thick, spikelet groups often distant on main axis, spikelets appressed to branches; spikelets greyish green to purple, rachilla persistent, upper part often becoming fragile, lemmas and/or paleas breaking up from base upwards; upper glume acute; lowest lemma 1,5 mm long, lateral veins distant, usually not reaching margin, never excurrent into a mucro; palea keels scabrous; anthers 3, 1,2 mm long. Caryopsis ellipsoid to ovoid. *Flowering July to June*. Moist, sandy

areas such as edges of riverine vegetation, along flood-plains and dams, also in disturbed overgrazed areas. *De Winter & Vahrmeijer 8584, Smook 4212.*

W S C N E

sclerantha Nees subsp. **sclerantha**

Perennial, densely tufted, up to 0,7 m high. Leaf blades up to 200 mm long, up to 6,5 mm wide. Basal sheaths densely woolly-hairy, sometimes this only visible on inner sheaths. Spikelets 2–5 mm long, 1,5–3,0 mm wide. Inflorescence branches spreading, with many spikelets, either appressed to branches or spreading; spikelets dark olive-green, rhachilla persistent, lemmas and/or paleas breaking up from base upwards; lemma acute, lateral nerves conspicuous; palea keels entire, scabrid; anthers 3, 0,7–1,0 mm long. Caryopsis ellipsoid. *Flowering January to May.* Sandy soils and sandy loams between rocks (often quartzite). *Smook 2024.*

W S C N E

sclerantha Nees subsp. **villosipes** (Jedwabn.) Launert
(= *E. sclerantha* Nees var. *villosipes* (Jedwabn.) De Winter)

Perennial, densely tufted (erect), up to 0,6 m high. Leaf blades up to 200 mm long, 2–6 mm wide. Leaves forming a dense basal tuft; basal sheaths with dense, yellowish, woolly hairs. Spikelets 2–8 mm long, 1,5–2,0 mm wide. Inflorescence narrow, sparsely branched, branches appressed to main axis, spikelets appressed, solitary or in groups of 2 or 3, pedicels short; spikelets olive-green, rhachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes cartilaginous, upper glume ovate, boat-shaped; lemma with lateral nerves indistinct and not reaching margin; palea keels a narrow line, scabrous; anthers 3, 0,7–1,0 mm long. Caryopsis ellipsoid. *Flowering February.* Wooded grassland. *Bell sub PRE 5985.*

W S C N E

stapfii De Winter

Perennial, densely tufted (erect), up to 0,9 m high. Leaf blades up to 200 mm long, up to 2 mm wide. Basal sheaths glabrous at base; leaves forming a dense basal tuft, usually tightly rolled and curling. Spikelets to 4 mm long, 0,5–1,0 mm wide. Inflorescence open, delicate, lowest branches whorled; spikelets with 2 or 3(–5) florets, rhachilla subpersistent, upper part fragile, lemmas and/or paleas breaking up from base upwards; lower glume up to three-quarters the length of lemma directly above and upper glume a third to four-fifths as long as lemma above in intact spikelet; lemma pale yellowish grey-green, not strongly keeled, more rounded at back with keel obscure at base; palea margins almost touching along entire length, overlapping at apex, keels a obscure line, smooth or scabrous; anthers 3, 0,8 mm long. *Flowering November to April.* Shallow sand or coarse sandy soils, sometimes in wet disturbed areas. *De Winter 2260.*

W S C N E

superba Peyr.

Perennial, densely tufted (often geniculate), up to 1 m high. Leaf blades up to 400 mm long, 3–12 mm wide.

Spikelets 6–16 mm long, 3–10 mm wide, strongly flattened with sides appearing jagged, disarticulating below glumes at maturity and falling as an entire unit; lemma narrowly ovate in profile, keel winged and scabrous; palea keels broadly winged, entire, minutely ciliate, hardly projecting laterally from lemma; anthers 3, 1,5–2,5 mm long. *Flowering August to May.* Sandy and stony soils in disturbed places or drainage areas. *Du Toit 177, Smook 4223.*

W S C N E

tef (Zucc.) Trotter*

(= *E. abyssinica* (Jacq.) Link)

Annual, loosely tufted (erect), up to 0,6 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Spikelets 5,5–9,0 mm long, 1,5–2,0 mm wide. Inflorescence open or contracted, branches usually longer than 40 mm, flexible and slender, pedicels slender; spikelets with rhachilla persistent and lemmas and paleas remaining intact at maturity; upper glume half to two-thirds the length of lemma above in intact spikelet; lemmas 2,0–2,7 mm long; palea keels scabrous; anthers 3, 0,3–0,5 mm long. Caryopsis oblong. *Flowering November to May (and July and September).* An escape from cultivation which grows in weedy places, along roadsides and where it has been naturalized. Native to northern Africa and Ethiopia. *Turner 50.*

W S C N E

tenella (L.) Roem. & Schult.

Annual, tufted (erect and geniculate), up to 500 mm tall. Leaf blades 60–90 mm long, up to 3 mm wide. Spikelets 1,5–2,5 mm long. Inflorescence open, with branches spreading and spikelets distant, eglandular, or with nonsticky glands; spikelets with rhachilla fragile, breaking up from apex downwards; lemma keel smooth or scabrid; palea keels with hairs 0,3–0,4 mm long and exerted from lemma; anthers variable, 2 or 3, (on the same inflorescence), 0,15–0,20 mm long. *Flowering January to April.* Bare, moist, sandy soils in disturbed places like pathsides and cultivated lands. *Smook 4142.*

W S C N E

tenuifolia (A. Rich.) Steud.

Weak perennial or annual, loosely tufted, up to 400 mm tall. Leaf blades 40–300 mm long, 1–3 mm wide. Spikelets 4–16 mm long, 1–3 mm wide. Inflorescence open, pedicels slender; spikelet outline coarsely serrate, lemmas on same side of rhachilla distinctly overlapping lemma above, rachilla persistent, lemmas and/or paleas breaking up from base upwards; upper glume barely reaching to just covering base of lemma directly above, lowest lemma 1,2–2,5 mm long; palea keels scabrous; anthers 3, 0,4–0,5 mm long. Caryopsis oblong, strongly laterally flattened. *Flowering January.* On sandy soils, gravels, clays and loams, usually areas of high moisture, also in disturbed areas. *Smook 4739.*

W S C N E

trichophora Coss. & T. Durand

(= *E. atherstonei* Stapf,
= *E. henrardii* Jansen)

Slender, wiry perennial, stoloniferous and tufted (erect to geniculate, rooting at nodes), up to 0.6 m high. Leaf blades up to 150 mm long, up to 3 mm wide. Culms usually branched above; basal sheaths glabrous or hairy, papery and nerves rounded and well apart at base, below collar of leaf sheaths or around culm nodes round glandular dots, usually flushed with purple are often present. Spikelets 3.5–5.0 mm long, 1.0–1.2 mm wide. Inflorescence open, branches purplish yellow with large prickles, spreading, whorled at base with long hairs in axils; spikelets oblong to narrowly oblong, with 3–5 florets, rhachilla subpersistent, fragile in upper part, lemmas and/or paleas breaking up from base upwards; glumes four-fifths as long as to longer than lemmas directly above them in intact spikelet, lower glume wide and covering most of lemma above; lemma pale greenish grey to dark grey, apex usually membranous and whitish; palea margins apart for most of its length, nearly touching to touching at apex, keels a narrow line, smooth to scaberulous; anthers 3, 0.8 mm long. *Flowering November to May*. On sand and loam, often on shallow soils and dolomite in moist places, road verges and other disturbed or overgrazed areas. *Smook 4217, Theron 2756*.

W S C N E

truncata Hack.

Mat-forming perennial; rhizomatous (rhizome short and branched) or tufted (forming raised cushions and characteristic rings); up to 400 mm tall. Leaf blades (lower) 10–40 mm long (upper blades up to 100 mm long); 1.0–1.5 mm wide. Basal sheaths with dense, long, woolly hairs. Spikelets 5–7 mm long, 2.5–3.0 mm wide, completely pallid to flushed with dark purple, spikelet rhachilla very fragile, breaking up from apex downwards, florets being shed with rhachilla internode; lowest lemma truncate; palea keels scaberulous; anthers 3, 0.8–1.2 mm long. *Flowering October to May*. Mainly in limestone soils, especially in and around pans. *Germishuizen 3980*.

W S C N E

virescens Presl*

Annual, tufted (erect or geniculate), up to 0.7 m high. Leaf blades up to 250 mm long, 3.5–7.0 mm wide. Basal leaf sheaths glabrous; leaf blade margins eglandular, scabrid and midvein eglandular. Spikelets 3.0–4.5 mm long, 1.0–1.2 mm wide. Inflorescence open, side branches spreading, pedicels long and slender, spikelets tending to be condensed to branches; spikelets oblong, rhachilla persistent, lemmas and/or paleas breaking up from base upwards; lower glume a third to half the length of lemma above in intact spikelet; lemma 1.3–1.7 mm long; palea keels scabrid; anthers 3, 0.2–0.3 mm long. Caryopsis oblong. *Flowering December to March*. Sandy soils in cultivated and disturbed areas. Native to South America. *Acocks 17662, Smook 4094*.

W S C N E

viscosa (Retz.) Trin.

Annual, tufted (erect and geniculate), up to 500 mm tall. Leaf blades 40–100 mm long, 2–5 mm wide. Spikelets 2–3 mm long, 1.0–1.5 mm wide. Inflorescence with sticky glands (noticeable due to particles adhering to them), open, with branches spreading and spikelets distant; spikelets with rhachilla fragile, breaking up from apex downwards; lemma keel glabrous, palea keels with hairs 0.4–0.5 mm long and exserted from lemma; anthers 3, 0.1–0.3 mm long. *Flowering February to August*. Disturbed and open places with sandy or shallow soils. *Van der Schijff 2615*.

W S C N E

volkensii Pilg.

Perennial, densely tufted (with straggling matted wiry culms; often procumbent), up to 1.2 m high. Leaf blades 20–80 mm long, 1–5 mm wide. Spikelets 3.5–7.0 mm long, 1.5–4.0 mm wide. Inflorescence sparsely branched, primary branches stiffly spreading, pedicels short; spikelets olive-green, rhachilla persistent, lemmas and/or paleas breaking up from base upwards; glumes obtuse; lemma broadly ovate (in profile), lateral nerves indistinct; palea keels entire, winged, scaberulous; anthers 3, 1 mm long. Caryopsis narrowly ovate. *Flowering October to January*. Damp soils in mountainous areas. *De Winter & Codd 216, Kluge 439*.

W S C N E

Eriochloa Kunth (s. Afr.: 6 spp.) 9901020

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 164–165.

fatmensis (Hochst. & Steud.) Clayton

(= *E. nubica* (Steud.) Hack. & Stapf ex Thell.)

Annual, culms erect or geniculate, up to 1.2 m high. Leaf blades 30–300 mm long, 2–10 mm wide. Spikelets (2.5–)3.0–5.0 mm long. Inflorescence branches several to many, ascending; lower glume apparently absent; upper glume with a short awn; lower floret sterile; palea absent. *Flowering January to April*. Wet places, usually on black clay, but also weedy by ephemeral water on other soils. *Smook 4416*.

W S C N E

meyeriana (Nees) Pilg. subsp. **meyeriana**

(= *Panicum meyerianum* Nees var. *meyerianum*)

Robust perennial (culms geniculate, rooting at nodes below), up to 1.5 m high. Leaf blades 50–250 mm long, 3–15 mm wide. Spikelets 2.5–3.5 mm long; lower glume produced above beadlike swelling as a short, truncate in-turned cuff; upper glume acute, not mucronate or awned. *Flowering October to May*. Riverbanks and wet places, on sandy or clay soils. *De Winter & Codd 544*.

W S C N E

meyeriana (Nees) Pilg. subsp. **grandiglumis** (Stent & J.M. Rattray) Gibbs-Russ.

(= *Panicum meyerianum* Nees var. *grandiglume* Stent & J.M. Rattray)

Perennial, similar to typical subspecies but with lower glume acute, extending a quarter to half the length of spikelet. *Flowering October to June*. Lowveld riverbanks and floodplains. *Codd 5421*.

W S C N E

parvispiculata C.E. Hubb.

Perennial, tufted, up to 1,2 m high. Leaf blades 80–300 mm long, 3–10 mm wide. Spikelets 2,0–2,5 mm long. Inflorescence branches few, appressed to main axis; lower glume apparently absent; upper glume with a mucro. *Flowering January to April*. Riverbanks and floodplain pans (Kruger National Park). *Van der Schijff 2701*.

W S C N E

stapfiana Clayton

(= *E. borumensis* sensu Stapf, non Hack.)

Robust perennial, tufted, up to 1,7 m high. Leaf blades 40–200 mm long, 3–8 mm wide. Spikelets 3–4 mm long. Inflorescence branches several to many, ascending; raceme rhachises with short hairs; lower glume apparently absent; upper glume mucronate or with an awn-point to 1 mm long; lower floret staminate, with palea almost as long as lemma; female-fertile lemma with mucro 0,3–0,7 mm long. *Flowering October to May*. Riverbanks and wet places on heavy soils. *De Winter & Codd 552*.

W S C N E

Eriochrysis P. Beauv. (s. Afr.: 2 spp.) 9900420

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 165–166.

brachypogon (Stapf) Stapf

(= *E. brachypogon* (Stapf) Stapf subsp. *australis* J.G. Anderson)

Perennial, tufted, up to 0,9 m high. Leaf blades 70–300 mm long, 1–3 mm wide. Spikelets (sessile) 5–6 mm long (pedicellate shorter). Golden callus hairs shorter than spikelets. *Flowering November to March*. Vleis and riverbanks. *Smook 2572*.

W S C N E

pallida Munro

Perennial. Tufted. 400–900 mm tall. Leaf blades 100–240 mm long, 1–4 mm wide. Spikelets (sessile) 3,5–5,0 mm long (pedicellate shorter). Golden callus hairs longer than spikelets. *Flowering July to June*. Vleis and riverbanks. *De Winter & Codd 212*.

W S C N E

Eulalia Kunth (s. Afr.: 2 spp.)

9900530

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 166–167.

aurea (Bory) Kunth

(= *E. geniculata* Stapf)

Perennial, creeping rhizomatous, up to 1 m high. Leaf blades 30–150 mm long, 3–6 mm wide. Culms often decumbent; sheaths glabrous. Spikelets 3,5–4,0 mm long (sessile and pedicellate alike). Raceme hairs golden-brown. *Flowering December to March*. Riverbanks and floodplains. *Smook 4283*.

W S C N E

villosa (Thunb.) Nees

Perennial, tufted, up to 1,4 m high. Leaf blades 50–250 mm long, 3–8 mm wide. Culms erect; sheaths hairy. Spikelets 5–7 mm long (sessile and pedicellate alike). Raceme hairs white; lemma awns 15–20 mm long. *Flowering September to May*. Open grassland on hill-sides. *Smook 4933*.

W S C N E

Eustachys Desv. (s. Afr.: 1 sp.)

9903020

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 167–168.

paspaloides (Vahl) Lanza & Mattei

Perennial, rhizomatous and tufted (erect or geniculately ascending), up to 0,95 m high. Leaf blades 20–180 mm long, 2–5 mm wide. Leaf sheaths strongly compressed, blades folded, with blunt apices. Spikelets 1,5–2,5 mm long. Spikes (3)–4–10(–15), 50–150 mm long; spikelets golden-brown; lower glume ovate, boat-shaped; upper glume oblong-elliptic with awn 0,5–1,5 mm long; lemma 1,5–2,4 mm long, with or without a mucro up to 1 mm long. *Flowering October to May*. Sandy and stony soils, occasionally on clay. *Smook 3124*.

W S C N E

Festuca L. (s. Afr.: 9 spp.)

9904170

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 168–170.

africana (Hack.) Clayton

(= *Pseudobromus africanus* (Hack.) Stapf,
= *Pseudobromus silvaticus* K. Schum.)

Perennial, rhizomatous, up to 1,2 m high. Leaf blades 250–500 mm long, 8–15 mm wide. Leaves cauline; ligule to 8 mm long. Spikelets 7–9 mm long. Panicle scanty, branches delicate and flexuous with spikelets solitary at tips; spikelets 1-flowered with a prominent rhachilla extension and a rudimentary floret; glumes unequal; lemma extending into a long straight awn 10–20 mm long. *Flowering January to April (occasionally in other months)*. Open patches in forests, usually in shade. *Schweickerdt 1563*.

W S C N E

caprina Nees

Perennial, rhizomatous and tufted (densely), up to 1 m high. Leaf blades 40–250 mm long, filiform, up to 1,5 mm wide. Old leaf sheaths persisting as fine fibres; ligule shorter than 1 mm; leaves usually not more than half the culm length. Spikelets 7–15 mm long. Panicle open, lax, 50–200 mm long; spikelets 4–6(–9)-flowered; lemmas awned, awn 1–4 mm long. *Flowering September to March*. Moist or wet areas near vleis in high altitude mountain grassland. *Smook 4809*.

W S C N E

costata Nees

Tough, erect perennial, rhizomatous (rhizome short and stout or long and deeply burrowed), up to 1,7 m high. Leaf blades 700–1000 mm long, 3,5–6,0 mm wide. Leaf sheaths persistent, breaking into coarse fibres that form a protective layer around young shoots; ligules 3–12 mm long. Spikelets 10–20 mm long. Panicle open, 120–240 mm long; spikelets 3–7-flowered; lemma acute or minutely awned. *Flowering September to January*. Moist places in high altitude mountain grassland, encouraged by frequent burning. *Mohle 47*.

W S C N E

dracomontana H.P. Linder

Perennial, rhizomatous, up to 0,8 m high. Leaf blades 80–200 mm long, 2–8 mm wide. Leaves cauline, blades expanded; ligules shorter than 1 mm. Spikelets 10–12 mm long. Panicle open, up to 250 mm long, branches flexuous, bare for the longest part, with 1–5 spikelets near tips; spikelets 3–7-flowered; lemmas awned, awn 2–4 mm long. *Flowering October*. Sour grassland in high mountains. *Meebold 13800*.

W S C N E

scabra Vahl

Perennial, rhizomatous (rhizome long or oblique), up to 1 m high, dioecious. Leaf blades 50–300 mm long, inrolled or expanded and up to 10 mm wide. Culm base bulbous at maturity; leaf sheaths velvet-hairy at base, old sheaths splitting into fine fibres; ligules 2–7 mm long. Spikelets 7–15 mm long. Panicle 50–300 mm long, 10–30 mm wide, narrow, contracted, sometimes spike-like or interrupted; spikelets 3–7-flowered; lemmas awnless or minutely awned. *Flowering September to February*. Sandy soils in undisturbed, high altitude mountain grassland and extending into valley bushveld, often in moist places and partial shade, stimulated by fire. *Smook 4832*.

W S C N E

Fingerhuthia Nees (s. Afr.: 2 sp.) 9903710

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 171.

africana Lehm.

Perennial (sometimes annual), rhizomatous, up to 0,9 m high. Leaf blades 25–400 mm long, 2–4 mm wide.

Spikelets 4,0–5,5 mm long. Panicle spike-like, 15–50 mm long; glumes with stiff dense hairs on keels; lemma apex rounded. *Flowering September to May*. Well-drained sandy or gravelly soils, often on limestone outcrops. *Brenan 14153*.

W S C N E

sesleriiformis Nees

Perennial, rhizomatous and tufted (forming large tussocks), up to 1,1 m high. Rhizomes robust and well developed. Leaf blades 120–240 mm long, 3–5 mm wide. Spikelets 5–6 mm long. Panicle spike-like, up to 80 mm long; glumes sparsely hairy on keels; lemma apex acuminate. *Flowering November to April*. Black clay in vleis or clayey soils near rivers. *Ellis 1841*.

W S C N E

Hackelochloa Kuntze (s. Afr.: 1 sp.) 9900220

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 172–173.

granularis (L.) Kuntze

Annual, up to 1 m high. Leaf blades 20–150 mm long, 6–12 mm wide. Spikelets (sessile) 1,0–1,5 mm long (pedicellate slightly longer), sessile spikelet globose, lower glume pitted and tuberculate. *Flowering March to April*. Disturbed places. *Parker sub PRE 38994*.

W S C N E

Harpochloa Kunth (s. Afr.: 1 sp.) 9902980

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 174–175.

falx (L.f.) Kuntze

Perennial, distinctly rhizomatous and tufted (densely), up to 0,9 m high. Leaf blades 100–250 mm long, often inrolled, 2–4(–6) mm wide. Spikelets 6–9 mm long. Spikes solitary, 1-sided, like a 'toothbrush', up to 80 mm long and 10 mm wide, sickle-shaped at maturity; spikelets in 2 rows, 3- or 4-flowered. *Flowering September to April*. Stony well-drained to compacted soils on moist slopes. *Van Wyk & Theron 4706*.

W S C N E

Helictotrichon Schult. (s. Afr.: 12 spp.) 9901970

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 175–177.

hirtulum (Steud.) Schweick.

Slender, weak perennial, loosely tufted, up to 1 m high. Leaf blades up to 250 mm long, filiform, up to 2 mm wide. Spikelets 8–11 mm long. Panicle lax, almost spike-like, up to 200 mm long; glumes unequal, upper up to two-thirds the spikelet length; rhachilla internodes 1,5–2,0 mm long, with hairs to 2 mm long;

lemma scabrid below insertion of awn. *Flowering November to March*. On mountainsides, often in shady, wet places and also in disturbed areas. *Theron 3421*.

W S C N E

longifolium (Nees) Schweick.

Perennial, tufted, up to 0,9 m high. Leaf blades 200–400 mm long, setaceous, up to 1,5 mm wide. Spikelets 8–10(–12) mm long. Panicle up to 200 mm long, usually open; upper glume ± three-quarters the spikelet length; rhachilla internodes ± 2 mm long, with hairs 3–4 mm long; lemma smooth or finely papillate, lobes above insertion of awn shorter than 7 mm. *Flowering December to April*. On moist and rocky mountainsides. *Du Toit 1169*.

W S C N E

natalense (Stapf) Schweick.

Perennial, tufted, up to 0,8 m high. Leaf blades 100–250 mm long, 3–5 mm wide. Leaf blades flat. Spikelets 7–9 mm long. Panicle to 250 mm long, usually open, with branches spreading; upper glume two-thirds the spikelet length; rhachilla internodes ± 1,5 mm long, hairy; lemmas glabrous, usually smooth, nerves usually raised, column of awn a loose spiral. *Flowering November to January*. On rocky hillsides and in wet places such as streamsides. *Galpin 13008*.

W S C N E

turgidulum (Stapf) Schweick.

Perennial, tufted, up to 1 m high. Leaf blades 60–150 (–250) mm long, 1,5–6,0 mm wide. Leaf blades flat. Spikelets 10–12 mm long. Panicle 70–300 mm long, open or contracted, often interrupted; glumes broadly lanceolate, upper glume two-thirds the spikelet length; rhachilla internodes 2 mm long, with hairs to 2 mm long; lemma glabrous, smooth or papillate, very often variegated with purple, lobes, above insertion of awn, 3–5 mm long. *Flowering October to April*. Usually in wet places on mountainsides and in vleis, occasionally at roadsides. *Smook 2560*.

W S C N E

Hemarthria R. Br. (s. Afr.: 1 sp.) 9900210

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses in southern Africa: 178.

altissima (Poir.) Stapf & C.E. Hubb.

Perennial, rhizomatous and stoloniferous, up to 1,5 m high, rust-red. Leaf blades 50–150 mm long, up to 6 mm wide. Spikelets (sessile and pedicellate) 5–7 mm long. Racemes very narrowly cylindrical, culm-like, spikelets sunken. *Flowering October to June*. Wet places. *Smook 5025*.

W S C N E

Heteropogon Pers. (s. Afr.: 2 sp.) 9900800

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 178–179.

contortus (L.) Roem. & Schult.

Perennial, rhizomatous, up to 1 m high. Leaf blades 30–300 mm long, 3–8 mm wide. Leaves usually folded, tips rounded and often hooded. Spikelets (sessile) 5,5–7,0 mm long (pedicellate 8–13 mm long and glandless). Inflorescence a single spike with velvety awns from upper half. *Flowering October to June*. Hillsides and rocky places on well-drained soils. *Smook 4303*.

W S C N E

melanocarpus (Ell.) Benth.

Robust annual, tufted, up to 2 m high. With stilt roots. Leaf blades flat, up to 500 mm long, 12 mm wide. Spikelets (sessile) 10–11 mm long (pedicellate with lower glume 16–20 mm long, with a row of depressed glands in middle). *Flowering January to May*. Roadsides and rocky places, often on turf soil. *Van der Schijff 2363*.

W S C N E

Holcus L. (s. Afr.: 2 spp.) 9901920

Sokutu. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 180.

lanatus L.*

Perennial, loosely tufted, up to 1 m high. Leaf blades 1,5–8,0 mm wide. Leaves conspicuously woolly, greyish to blue-green. Spikelets 3–4 mm long; lower glume awn never exceeding 0,5 mm; upper glume awn to 1 mm long; upper floret male. *Flowering November to January*. Vleis, damp sheltered places, on sandy to nutrient rich soils. Native to Europe. *Smook 4878, Codd & Dyer 6277*.

W S C N E

Hordeum L. (s. Afr.: 4 spp.) 9904510

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 180–182.

capense Thunb.

Perennial, tufted, up to 0,6 m high. Leaf blades 60–170 (–240) mm long, 3–6 mm wide. Leaf sheaths fibrous with age; blades rigid, lacking auricles; spike 8–17 mm wide (including awns), rhachis readily disarticulating at maturity; spikelet awns to 20 mm long. *Flowering October to April*. Usually in moist areas such as streamsides, riverbanks and around dams, occasionally in disturbed areas. *Louw 1616*.

W S C N E

Hyparrhenia E. Fourn. (s. Afr.: 20 spp.) 9900730

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 182–188.

anamesa Clayton

Perennial, rhizomatous and tufted (densely), up to 1,2 m high. Leaf blades up to 400 mm long (but often shorter); 4 mm wide. Spikelets (sessile) 5,0–6,5 mm long (white-villous, callus 1,0–1,8 mm long). Racemes 15–25 mm long, with 2 homogamous pairs at base of upper raceme, raceme pairs with 4–7 awns 25–40 mm long having hairs to 0,6 mm long; raceme bases terete, unequal; pedicellate spikelets awnless or with an awn-point to 2 mm long. *Flowering October to May*. Dry soils, open places. *Rodin 3821*.

W S C N E

collina (Pilg.) Stapf

Slender perennial, rhizomatous and tufted (loosely), up to 1,3 m high. Leaf blades up to 300 mm long, 2–5 mm wide. Spikelets (sessile) 4,5–5,0 mm long (usually dark purple with white hairs, callus cuneate). Spatheoles 20–40 mm long; peduncles 10–25 mm long; raceme pairs with 4–6 awns 15–25 mm long; raceme bases subequal, flattened; pedicellate spikelets villous. *Flowering April to May*. Damp soils and dry savanna. *Devenish 1456*.

W S C N E

cymbaria (L.) Stapf

Robust perennial, rhizomatous and tufted (coarsely), up to 4 m high. With stilt roots. Leaf blades up to 450 mm long, 6–20 mm wide. Spikelets (sessile) 3,8–4,5 mm long (glabrescent to shortly pubescent, often purplish, callus square, 0,2–0,3 mm long). Spatheoles ovate, bright reddish-brown, 8–18 mm long; peduncles 3–8 mm long. Raceme pairs with 3–5(–6) awns to 16 mm long; raceme bases subequal, flattened; pedicellate spikelets glabrous to puberulous, margins ciliate. *Flowering November to June*. Forest margins, open hillsides. *Scheepers 190*.

W S C N E

dichroa (Steud.) Stapf

Perennial (culms stout), rhizomatous and tufted, up to 3 m high. Leaf blades up to 600 mm long, 8 mm wide. Spikelets (sessile) 4–5 mm long (hairs pale brownish, scanty, callus 0,4–0,8 mm long). Panicle copiously branched; spatheoles narrowly lanceolate, 20–40 mm long; raceme pairs with 6–10 awns (10–)20–30 mm long, racemes often clasped at base by spatheoles at maturity; raceme bases terete, unequal. *Flowering March to June*. Moist places, weedy places, roadsides. *Liengme 184*.

W S C N E

dregeana (Nees) Stapf

(= *H. aucta* (Stapf) Stapf ex Stent,
= *H. pilosissima* (Hack.) J.G. Anderson)

Robust perennial, rhizomatous and tufted (densely), up to 2 m high. Leaf blades up to 600 mm long, 3–8 mm wide. Culms 4–9 mm across; basal sheaths hairy. Spikelets (sessile) 4–5 mm long (densely long-hairy to shortly hairy, rarely glabrous, callus cuneate, 1 mm long). Spatheoles 20–25 mm long; peduncles 15–50 mm long; raceme pairs with 10–25 awns 8–20 mm

long; raceme bases subequal, flattened, short-appendaged; pedicellate spikelets villous to hispidulous, rarely glabrous. *Flowering November to May*. Stony hillsides, streamsides, dry soils around vleis. *Smook 4775*.

W S C N E

filipendula (Hochst.) Stapf var. **filipendula**

Delicate and graceful perennial, rhizomatous and tufted, up to 2 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Spikelets (sessile) 5,5–7,0 mm long (glabrous, callus 1,8–3,0 mm long). Racemes 10–12 mm long; raceme pairs with 2(–4) awns 30–55 mm long, with hairs to 1,2 mm long; raceme bases terete, unequal, with 2 pairs of homogamous spikelets at base of upper raceme; pedicellate spikelets with an awn 1–5 mm long. *Flowering November to April*. Woodlands, higher rainfall areas, open veld. *Codd 6880*.

W S C N E

filipendula (Hochst.) Stapf var. **pilosa** (Hochst.) Stapf

Perennial, rhizomatous and tufted, up to 2 m high. Leaf blades up to 300 mm long, up to 4 mm wide. Spikelets (sessile) 5,5–7,0 mm long (white-villous, callus 1,8–3,0 mm long). Racemes 10–12 mm long; raceme pairs with (2–)4 awns 30–55 mm long, with hairs to 1,2 mm long; raceme bases terete, unequal, with 2 pairs of homogamous spikelets at base of upper raceme; pedicellate spikelets with an awn 1–5 mm long. *Flowering December to April*. Open veld and disturbed places in higher rainfall areas. *Smook 3049*.

W S C N E

finitima (Hochst.) Andersson ex Stapf

Robust perennial, rhizomatous, up to 2 m high. Leaf blades up to 600 mm long, up to 8 mm wide. Spikelets (sessile) 5,5–6,0 mm long (yellowish, glabrous to shortly white hairy, callus linear, pungent, 1–2 mm long). Raceme pairs with 2–6 awns, 25–40 mm long; raceme bases terete, unequal, upper raceme base 1,5–2,5 mm long, homogamous spikelets 0 or 1 pair at base of upper racemes. *Flowering December to March*. Rocky places, disturbed places. *Van Vuuren 1685*.

W S C N E

gagensis (Rendle) Stapf

Perennial, rhizomatous and tufted (loosely), up to 1,8 m high. Leaf blades 80–200 mm long, 2–5 mm wide. Culms slender. Spikelets (sessile) 4,0–5,5 mm long (white-hispidulous, callus cuneate, 0,8–1,5 mm long). Raceme pairs with 4 or 5 awns 20–30 mm long; raceme bases terete, unequal, upper raceme base (2,0–)2,5–3,5 mm long, homogamous spikelets 0 or 1 pair at base of upper racemes. *Flowering November to May*. Ruderal on poor soils, roadsides. *De Winter & Codd 145*.

W S C N E

hirta (L.) Stapf

Perennial, rhizomatous and tufted (wiry), up to 0,8 m high. Leaf blades 20–150 mm long, 1–2(–4) mm wide. Culms slender. Spikelets (sessile) 4,0–6,5 mm long

(yellowish green to violet, white-villous, callus acute). Panicle scanty, of 2–10 raceme pairs, the pairs with 0 or 1 homogamous pairs at base of upper racemes and 8–14 awns 10–35 mm long with hairs to 0,3 mm long; raceme bases terete, unequal; racemes never deflexed, 20–40 mm long. *Flowering September to June*. Stony soils. *Hanekom 1706*.

W S C N E

newtonii (Hack.) Stapf var. **newtonii**

Perennial, rhizomatous and tufted, up to 1 m high. Leaf blades up to 300 mm long, up to 3 mm wide. Basal sheaths tomentose or glabrous. Spikelets (sessile) 6–10 mm long (lower glume glabrous or with a few hairs at tip, callus acute to pungent, 1,5–2,0 mm long). Raceme pairs with 2–4 awns 25–55 mm long; raceme bases covered with stiff hairs, upper raceme base with a linear scarious appendage 3–4 mm long. *Flowering December to March*. Stony hillsides. *Story 1645*.

W S C N E

newtonii (Hack.) Stapf var. **macra** Stapf

Perennial, rhizomatous and tufted (densely), up to 1,2 m high. Leaf blades up to 300 mm long, up to 3 mm wide. Basal sheaths tomentose or glabrous. Spikelets (sessile) 6–10 mm long (lower glume hairy, callus acute to pungent, 1,5–2,0 mm long). Raceme pairs with 2–4 awns 25–55 mm long; raceme bases covered with stiff hairs, upper raceme base with a linear scarious appendage 3–4 mm long. *Flowering December to April*. Stony hillsides. *Louw 2720*.

W S C N E

nyassae (Rendle) Stapf

Perennial, rhizomatous and tufted, up to 1,3 m high. Leaf blades up to 450 mm long, 2–5 mm wide. Basal sheaths with dense spreading white hairs. Spikelets (sessile) 5–6 mm long (yellowish green to violet, with golden-yellow hairs, callus linear or narrowly cuneate, 0,8–1,2 mm long). Raceme pairs with 6–14 awns 20–40 mm long; raceme bases terete, unequal, upper raceme base 2–3 mm long. *Flowering November to March*. Moist places in open veld. *De Winter & Codd 432*.

W S C N E

poecilotricha (Hack.) Stapf

(= *H. buchanani* (Stapf) Stapf ex Stent)

Perennial, rhizomatous and tufted, up to 1,3 m high. Leaf blades up to 300 mm long, up to 3 mm wide. Spikelets (sessile) 5,5–7,0 mm long (with yellow or reddish-brown hairs; callus acute to pungent, 1–2 mm long). Raceme pairs with 4–7 awns 25–40 mm long; raceme bases terete, unequal, upper raceme base 3,5–7,0 mm long, with 2 pairs of homogamous spikelets. *Flowering December to April*. Bushveld. *Jacobsen 2127*.

W S C N E

quarrei Robyns

Perennial, short rhizomatous and tufted, up to 2 m high. Leaf blades up to 400 mm long, up to 5 mm wide.

Spikelets (sessile) 4,5–5,5 mm long (white pubescent to villous, callus slender, 0,7–1,2 mm long). Raceme pairs with 6–10 awns 18–36 mm long; raceme bases unequal, terete, with 0 or 1 homogamous pairs at base of upper racemes; racemes deflexed at maturity. *Flowering January to June*. Forest margins. *Pole-Evans 3699*.

W S C N E

rudis Stapf

Robust perennial, rhizomatous and tufted (coarsely), up to 3 m high. Leaf blades 300–600 mm long, 3–18 mm wide. Culms to 8 mm thick, exposed at base, with stilt roots. Spikelets (sessile) 5–6 mm long (pale or reddish brown, with silky white hairs, callus cuneate). Spatheoles 25–40 mm long; peduncles 10–20 mm long; raceme pairs with 4–7 awns, 22–40 mm long; raceme bases subequal, flattened, short-appendaged; pedicellate spikelets villous, with an awn 2–6 mm long. *Flowering February to May*. Moist soils. *Scheepers 242*.

W S C N E

rufa (Nees) Stapf var. **rufa**

Perennial or annual (sometimes), rhizomatous, up to 2,5 m high. Leaf blades 300–600 mm long, 2–8 mm wide. Spikelets (sessile) 3,5–4,5 mm long (yellowish to reddish brown, often violet-tinged, usually glossy, glabrous or with scanty reddish brown hairs, callus rounded or wedge-shaped, 0,2–0,8 mm long). Panicle lax or contracted; spatheoles linear, 40–50 mm long; raceme pairs with 7–14 awns 20–30 mm long; raceme bases terete, unequal. *Flowering December to June*. Disturbed moist places and roadsides. *Scheepers 215*.

W S C N E

schimperi (A. Rich.) Stapf

Robust, erect perennial, shortly rhizomatous and tufted (coarsely), up to 4 m high. With stilt roots. Leaf blades up to 600 mm long, up to 20 mm wide. Culms to 8 mm thick. Spikelets (sessile) 4–5 mm long (sparsely hairy to nearly glabrous, callus cuneate to acute). Peduncles 10–15 mm long; raceme pairs with 6–8 awns, 20–35 mm long; raceme bases subequal, flattened and short-appendaged; pedicellate spikelets glabrous to sparsely pilose. *Flowering December to May*. Open moist places. *Smook 4876*.

W S C N E

tamba (Steud.) Stapf

(= *H. glauca* Stent)

Stout, robust perennial, rhizomatous and tufted (densely), up to 3 m high. Sometimes with small stilt roots. Leaf blades up to 800 mm long, 3–7 mm wide. Culms to 4 mm thick; basal sheaths hairy. Spikelets (sessile) 5 mm long (becoming dark purplish grey, with long white hairs, callus cuneate). Spatheoles 26–40 mm long; peduncles 20–30 mm long; raceme pairs with 5–8 awns, 16–25 mm long; raceme bases subequal, flattened, short-appendaged; pedicellate spikelets villous. *Flowering December to June*. Streamsides and roadsides. *Theron 3691*.

W S C N E

umbrosa (Hochst.) Andersson ex Clayton

Robust perennial, rhizomatous, up to 2 m high. With stilt roots. Leaf blades up to 600 mm long, up to 12 mm wide. Culms rambling and slender below, increasing to 6 mm across above. Spikelets (sessile) 4 mm long (with long white hairs, callus 0.4 mm long, oblong with rounded tip). Spatheoles 12–23 mm long; peduncles 3–13 mm long; raceme pairs with 4–6 awns, 7–13 mm long; raceme bases flattened, subequal; pedicellate spikelets villous. *Flowering July, May, and June.* Roadsides, old lands. *Pole-Evans 3775.*

W S C N E

variabilis Stapf

Robust perennial, rhizomatous, up to 3 m high. With stilt roots. Leaf blades up to 450 mm long, up to 15 mm wide. Culms 3.0–5.5 mm across. Spikelets (sessile) 4–5 mm long (nearly glabrous to sparsely and shortly white-hairy, callus cuneate, 0.5–1.0 mm long). Spatheoles 14–24 mm long; peduncles 3–9 mm long; raceme pairs with 3–5 awns, 18–30 mm long; raceme bases subequal, flattened and short-appendaged; pedicellate spikelets glabrous, except margins ciliate. *Flowering January to May.* Forest margins. *Galpin 8887.*

W S C N E

Hyperthelia Clayton (s. Afr.: 1 sp.) 9900731

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 188–189.

dissoluta (Nees ex Steud.) Clayton

(= *Hypparrhenia dissoluta* (Nees) C.E. Hubb.)

Robust perennial, tufted, up to 3 m high, yellow and green. Culms and awns yellow, leaves and spikelets green. Leaf blades up to 300 mm long, up to 12 mm wide. Spikelets (sessile) 6.5–7.5 mm long (pedicellate to 14 mm long), spikelets glabrous, lower glume of sessile spikelets narrowly grooved, awns 50–100 mm long. *Flowering July to June (mostly in autumn).* Roadsides and disturbed places. *Codd 6879.*

W S C N E

Imperata Cirillo (s. Afr.: 1 sp.) 9900370

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 189–190.

cylindrica (L.) Raeusch.

(= *I. cylindrica* (L.) Raeusch. var. *africana* (Andersson) C.E. Hubb.,

= *I. cylindrica* (L.) Raeusch. var. *major* (Nees) C.E. Hubb.)

Perennial, strongly rhizomatous, up to 1.2 m high. Leaf blades up to 1500 mm long, 2–12 mm wide, leaves broad in middle, narrowed at tip and base, reddish in winter. Spikelets all alike, 3–6 mm long. Panicle dense, silky, white, cylindrical. *Flowering August to June.* Riverbanks, vleis and seasonally wet places. *Hemm 380.*

W S C N E

Ischaemum L. (s. Afr.: 2 spp.)

9900100

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 190–191.

afrum (J.F. Gmel.) Dandy

(= *I. brachyatherum* (Hochst.) Hack.,
= *I. glaucostachyum* Stapf)

Perennial, rhizomatous, up to 1.2 m high. Leaf blades 100–500 mm long, 2–5(–11) mm wide, leaves glaucous, tips tapering to a long, fine point. Spikelets (sessile) 5–8 mm long (pedicellate smaller); lower glume of sessile spikelets concave, keels not winged. *Flowering October to April.* Black turf soil, usually near water. *Du Toit 592.*

W S C N E

fasciculatum Brongn.

(= *I. arcuatum* (Nees) Stapf)

Perennial, rhizomatous, 0.9 m high. Leaf blades 50–250 mm long, (4–)5–16 mm wide, leaves green, becoming reddish brown, tips narrowing shortly to a sharp point. Spikelets (sessile) 5–6 mm long; lower glume of sessile spikelets convex or flat, keels usually winged on upper half; awns 5–10 mm long. *Flowering October to May.* Wet places, vleis and riverbanks. *Smook 3170.*

W S C N E

Koeleria Pers. (s. Afr.: 1 sp.)

9903740

Sokutu. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 193–194.

capensis (Steud.) Nees

(= *K. cristata* auctt., non (L.) Pers. var. *cristata*,
= *K. cristata* (L.) Pers. var. *brevifolia* (Nees) C.E. Hubb.,
= *K. cristata* var. *convoluta* (Steud.) C.E. Hubb.)

Perennial, tufted (to densely so), up to 0.8 m high. Leaf blades 40–200 mm long, 1–4 mm wide. Spikelets 3.5–4.0 mm long. Inflorescence spiciform, sometimes interrupted; spikelets 2–4-flowered, paleas projecting out of florets and thus conspicuous in mature spikelets. *Flowering October to January.* Common in montane areas, often among rocks and steep slopes, dry to wet areas. *Behr 899, Codd 3155.*

W S C N E

Lagurus L. (s. Afr.: 1 sp.)

9902610

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 194.

ovatus L.*

Velvety annual, up to 0.6 m high. Leaf blades up to 100 mm long, up to 10 mm wide. Spikelets 7–10 mm long (excluding long awns to 25 mm long). Panicle compact, oval, soft from profuse spreading glume hairs and fine awns from glumes and lemmas. *Flowering October to November (rarely later).* Disturbed places, usually sandy soil. Native to Mediterranean region. *Chippindall sub PRE 32731.*

W S C N E

Leersia Sw. (s. Afr.: 4 spp.) 9901590

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 196–197.

denudata *Launert*

Slender perennial, hydrophyte and tufted, up to 0,7 m high. Leaf blades 30–140 mm long, 1,5–6,0 mm wide (flat or rolled, nearly smooth). Culm nodes velvety. Spikelets 3,5–4,5 mm long, 1,3–1,6 mm wide; lemma and palea with fine cilia shorter than 0,2 mm. *Flowering February*. Swampy grassland, vleis, deep parts of temporary pans. *Kings 1620*.

W	S	C	N	E
---	---	---	---	---

hexandra Sw.

Perennial, hydrophyte and rhizomatous (rhizome creeping), up to 1 m high. Leaf blades 100–200 mm long, 4–8 mm wide (flat, strongly scabrous). Culm nodes hairy. Spikelets 3,4–4,8 mm long, 1,2–1,4 mm wide; lemma and palea keels with stiff cilia 0,2–0,6 mm long. *Flowering July to June*. Floodplains and permanently wet places such as vleis, pans and ditches, often forming extensive colonies. *Van der Schijff 2115*.

W	S	C	N	E
---	---	---	---	---

Leptocarydion Stapf (s. Afr.: 1 sp.) 9903430

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 197.

vulpiastrum (De Not.) Stapf

Annual, loosely or compactly tufted, up to 1 m high. Leaf blades 20–120 mm long, 6–20 mm wide, papery, lanceolate-oblong, rounded at base. Spikelets 5–11 mm long. Panicle a narrow silky plume, 50–150 mm long. *Flowering February to June*. Usually on sandy soil in mopani veld, riverine woodland or rocky hillsides, often in shade. *Van Wyk 3998*.

W	S	C	N	E
---	---	---	---	---

Leptochloa P. Beauv. (s. Afr.: 3 spp.) 9903330

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 198–199.

chinensis (L.) Nees

Perennial, hydrophyte, stoloniferous, and tufted, up to 0,82 m high. Leaf blades 200–500 mm long, 3,0–7,5 mm wide, leaf sheaths white, papery and glabrous. Spikelets 2,1–3,2 mm long. Panicle 200–600 mm long; spikelets 2–6-flowered; glumes unequal, shorter than lemmas. *Flowering December to April*. In or by water. *De Winter & Codd 315*.

W	S	C	N	E
---	---	---	---	---

panicea (Retz.) Ohwi

Annual, tufted, up to 1,2 m high. Leaf blades up to 250 mm long, $\pm$ 7 mm wide, linear, leaf sheaths and blades papillate-pilose. Spikelets 1,9–2,5 mm long.

Panicle 200–300 mm long; spikelets (2–)3(–5)-flowered. *Flowering January to May*. Clayey loam, in or near water. *Acocks 16789*.

W	S	C	N	E
---	---	---	---	---

uniflora A. Rich.

(= *Craspedorhachis uniflora* (Hochst. ex A. Rich.) Chippind.)

Slender annual, tufted, up to 0,61 m high. Leaf blades 40–120 mm long, 6–18 mm wide, leaf blades lanceolate-oblong to oblong. Spikelets 1,9–2,8 mm long. Panicle 150–450 mm long; spikelets 1-flowered. *Flowering January to May*. In bushveld under trees. *De Winter & Codd 671*.

W	S	C	N	E
---	---	---	---	---

Lintonia Stapf (s. Afr.: 1 sp.) 9902020

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 201.

nutans Stapf

Perennial, shortly stoloniferous and tufted, up to 0,9 m high. Leaf blades 30–150 mm long, 3–5 mm wide, usually glabrous. Spikelets 6–10 mm long, 4–8 mm wide. Inflorescence of 2–4 digitate or subdigitate racemes; spikelets 4–10-flowered, wedge-shaped; lemma shortly bilobed, with an awn 1–11 mm long between lobes. *Flowering December to March*. On black clayey soil in vleis or along pan edges. *Du Toit 169*.

W	S	C	N	E
---	---	---	---	---

Lolium L. (s. Afr.: 4 spp.) 9904330

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 201–203.

multiflorum Lam.*

Short-lived perennial or annual, loosely tufted, up to 0,8 m high. Leaf blades 110–220 mm long, 3–8 mm wide. Spikelets 8–20 mm long, 2–10 mm wide. Glumes ascending or spreading, not concealing spikelets, a quarter to half (to three-quarters) the spikelet length; lemmas acute, not turgid at maturity, awn to 15 mm long. Mature caryopsis more than 3 times as long as wide. *Flowering October to April*. On roadsides and other disturbed areas. Native to Europe and Mediterranean region. *Smook 4829*.

W	S	C	N	E
---	---	---	---	---

perenne L.*

Perennial, tufted (with numerous culms and sterile leafy shoots), up to 500 mm tall. Leaf blades 50–140 (–300) mm long, 2–4 mm wide. Spikelets 10–15 mm long, 3–10 mm wide. Glumes ascending or spreading, not concealing spikelets, half to three-quarters the spikelet length; lemmas acute, not turgid at maturity, awnless. Mature caryopsis more than 3 times as long as wide. *Flowering March to April and November to December*. On roadsides, in moist disturbed areas and

cultivated and fallow lands. Native to Europe. *Hanekom* 1719.

W S C N E

rigidum Gaudin*

(= *L. loliaceum* (Bory & Chaup.) Hand.-Mazz.)

Annual, tufted (with numerous flowering culms or solitary culms in young plants; culms branching near base and sometimes rooting from lower nodes), up to 300 mm tall. Leaf blades 100–170 mm long, 5–8 mm wide. Spikelets 7–20 mm long, 1–3 mm wide, 2-flowered; glumes appressed to rachis, slightly gaping at maturity, concealing or partly concealing spikelets in concavities of rachis, three-quarters of to slightly longer than spikelets; lemmas obtuse to acute, not turgid at maturity, awn absent or to 10 mm long. Mature caryopsis more than 3 times as long as wide. *Flowering September to January*. In disturbed and weedy places on sandy to clayey soils, preferably where it is moist, occasionally in water and on stream edges. Native to Mediterranean region. *Theron* 11.

W S C N E

temulentum L.*

Robust annual, culms solitary or tufted, up to 0.9 m high. Leaf blades 150–300 mm long, 3–7 mm wide. Spikelets 8–28 mm long, 3–8 mm wide. Glumes ascending or spreading, not concealing spikelets, $\frac{3}{4}$ to $1\frac{1}{2}$ times spikelet length; lemmas elliptical to ovate, very turgid at maturity, awn absent or to 20 mm long. Mature caryopsis 2–3 times as long as wide. *Flowering September to February*. Usually in cultivated or fallow lands, gardens or other disturbed areas, often associated with wheat. Native to warm temperate countries. *Burt Davy* 3889.

W S C N E

Lophacme Stapf (s. Afr.: 1 sp.) 9903520

Kockemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 203–204.

digitata Stapf

Slender perennial, rhizomatous and tufted, up to 0.6 m high. Rhizome long and slender. Leaf blades 30–45 mm long, 1.0–2.5 mm wide. Basal sheaths fibrous. Spikelets 5–6 mm long. Spikes 2–8, up to 80 mm long; central nerve of lemma extending to an awn longer than floret. *Flowering February to April*. Open highveld sourveld. *Codd* 974.

W S C N E

Loudetia Steud. (s. Afr.: 6 spp.) 9901751

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 205–206.

densispica (Rendle) C.E. Hubb.

Perennial, tufted, up to 0.9 m high. Leaf blades 100–200 mm long, up to 3 mm wide. Spikelets 10–15

mm long. Panicle 40–80 mm long, spikelike and dense; lower glume obtuse, with 2 rows of tubercles; upper glume and lower lemma usually glabrous; callus of female-fertile (upper) floret 2-toothed. *Flowering January*. Open grassland. *Acocks* 13308.

W S C N E

filifolia Schweick.

Slender, wiry perennial, tufted, up to 0.6 m high. Leaf blades up to 100 mm long, filiform or up to 2 mm wide. Culms thin, branched after first node. Spikelets 6–8 mm long; glumes acute or shortly awned; callus of female-fertile (upper) floret truncate or rounded. *Flowering November to June*. Rock crevices on cliffs and mountainsides. *Van Rooyen* 3333.

W S C N E

flavida (Stapf) C.E. Hubb.

Perennial, tufted, up to 1.5 m high. Leaf blades 150–400 mm long, 2–4 mm wide, leaves tending to be widely spreading. Spikelets 8–12 mm long; glumes acute or shortly awned, usually glabrous and rarely tubercled; lower lemma acute; female-fertile (upper) lemma lobes 1–2 mm long and acute; callus of female-fertile floret pointed or truncate; awns 30–40 mm long; stamens 3. *Flowering November to March*. Shallow rocky soils, also vleis margins. *Smook* 912.

W S C N E

pedicellata (Stent) Chippind.

Perennial, tufted, up to 1.6 m high. Leaf blades up to 150 mm long, 4–6 mm wide; ligule a conspicuous fringe. Spikelets 20–28 mm long, in groups of 3 (or rarely paired), pedicels unequal and 2 mm and 4 mm long respectively; lower glume ovate and half the length of upper; lower lemma 7-nerved and female-fertile (upper) 9-nerved; lower lemma lobes awned, 4–5 mm long, central awn 50–70 mm long. *Flowering December to April*. *Burkea-Terminalia* veld. *Ellis* 3505.

W S C N E

simplex (Nees) C.E. Hubb.

Perennial, tufted, up to 1.5 m high. Leaf blades 100–300 mm long, 5 mm wide. Spikelets 7–13 mm long; lower glume obtuse or truncate; female-fertile (upper) lemma lobes acute, 1 mm long, central awn 25–50 mm long; callus of female-fertile floret clearly 2-toothed in mature specimens; stamens 2. *Flowering July to June*. Poor, coarse, sandy soils in open grassland or hillsides. *Westfall* 1517.

W S C N E

Megaloprotachne C.E. Hubb. (s. Afr.:

2 spp.) 9900881

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 207–208.

albescens C.E. Hubb.

Erect or decumbent annual, up to 0,8 m high. Leaf blades up to 150 mm long, 3–4 mm wide. Long hairs present on leaf sheaths and collar. Spikelets 4,0–4,5 mm long; lower glume as long as spikelet. *Flowering February to April*. Sandveld. *Smook* 4314.

W	S	C	N	E
---	---	---	---	---

Melica L. (s. Afr.: 2 spp.)

9903860

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 209.

racemosa Thunb.

Perennial, tufted, up to 500 mm tall. Leaf blades 40–300 mm long, 1,0–5,0 mm wide (erect, flat or rolled, often scabrous). Spikelets 5–9(–11) mm long; lemmas of female-fertile florets hairy only on margins; lemmas of sterile florets glabrous or with only a few hairs. *Flowering September to April*. On steep hillsides and mountainsides among rocks and also in lightly shaded places at edges of bush clumps and dune forest. *Smook* 5861A.

W	S	C	N	E
---	---	---	---	---

Melinis P. Beauv. (s. Afr.: 10 spp.) 9901340

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 210–213.

longiseta (A. Rich.) Zizka subsp. **bellespicata** (Rendle)

Zizka

(= *Rhynchelytrum bellespicatum* (Rendle) Stapf & C.E. Hubb.)

Perennial, tufted, up to 0,8 m high. Leaf blades (30–) 60–200 mm long, 1,5–5,0(–6,0) mm wide, leaves hairy or glabrous. Spikelets 3,5–5,0(–6) mm long, 2 mm wide; internode between glumes 0,3–0,5 mm long; lower glume 0,9–1,4 mm long; upper glume awned, 5–10 mm long; lower lemma awned, awn 8–20 mm long. *Flowering February to June*. Crevices in rocks, often sunny places. *De Winter & Codd* 335.

W	S	C	N	E
---	---	---	---	---

macrochaeta Stapf & C.E. Hubb.

Mainly annual, tufted, up to 1 m high. Leaf blades 50–150 mm long, 5–10 mm wide. Culms often with stilt roots from lower nodes. Spikelets 1,5–2,0 mm long, 0,5 mm wide; lower glume reduced to a scale; upper glume 7-nerved, awnless and not grooved; female-fertile (upper) lemma with 3–5 nerves, awn (5–)8–20 mm long. *Flowering April to June*. Sand or loam, mainly grassland. *Ellis* 1878.

W	S	C	N	E
---	---	---	---	---

minutiflora P. Beauv.

(= *M. tenuinervis* (Stapf) Stapf)

Perennial, tufted, 1,5 m high. Leaf blades 40–200 mm long, 5–11 mm wide, leaves strongly aromatic and sticky, hairs finely tubercled, exuding drops of viscid

oil. Spikelets 1,5–2,0 mm long, 0,5 mm wide, glabrous and sometimes shortly hairy; upper glume 7-nerved, often with awn 0–9 mm long; upper glume and lower lemma grooved between prominent veins; lower lemma awnless or awned, awn 5–14 mm long. *Flowering April to June*. Sand or near rocks, moist and shady areas, grassland or savanna, open hillsides. *Theron* 3682.

W	S	C	N	E
---	---	---	---	---

nerviglumis (Franch.) Zizka

(= *Rhynchelytrum nerviglume* (Franch.) Chiov.,

= *Rhynchelytrum setifolium* (Stapf) Chiov.)

Perennial, tufted, up to 1,2 m high. Leaf blades (30–) 100–300(–440) mm long, (1,3–)2,0–3,5(–4,5) mm wide. Basal leaf sheaths strongly overlapping; leaf blades rolled. Spikelets (3,2–)3,6–5,0(–5,7) mm long, 2 mm wide, often densely covered with hairs up to 4 mm long, white or purple; internode between glumes 0,3(–0,6) mm long; lower glume 0,5 mm long and awns 1–2(–3) mm long. *Flowering July to June*. Open grassland, stony hillsides. *Van der Schijff* 370.

W	S	C	N	E
---	---	---	---	---

repens (Willd.) Zizka subsp. **repens**

(= *Rhynchelytrum repens* (Willd.) C.E. Hubb.)

Mainly annual or perennial (rarely), tufted, up to 1,2 m high. Leaf blades 40–200(–270) mm long, 2–11(–13) mm wide. Spikelets 2–4(–5) mm long, 2–3 mm wide, always hairy; internode between glumes 0,1–0,5(–0,6) mm long; lower glume (0,3–)0,6–1,3(–1,5) mm long; upper glume and lower lemma gibbous, rarely tapering into an elongated beak, mostly shortly awned, up to 3 mm long. *Flowering September to May*. Mainly a ruderal, common on disturbed ground. *Hanekom* 1973.

W	S	C	N	E
---	---	---	---	---

repens (Willd.) Zizka subsp. **grandiflora** (Hochst.) Zizka

(= *Rhynchelytrum grandiflorum* Hochst.)

Annual, tufted, up to 0,9 m high. Leaf blades 40–150(–180) mm long, 2,0–6,5(–8,0) mm wide. Spikelets (4–)5–12 mm long, 2–3 mm wide, glabrous to hairy; internode between glumes (0,5–)0,7–1,7(–2,0) mm long; lower glume (0,6–) 1,5–3,0(–4,3) mm long; upper glume and lower lemma gibbous, tapering into an elongated beak, awns (2–) 12–22 mm long. *Flowering January to July*. More often in sunny arid areas, not a ruderal. *Smook* 5328.

W	S	C	N	E
---	---	---	---	---

scabrida (K. Schum.) Hack.

(= *Rhynchelytrum scabridum* (K. Schum.) Chiov.)

Perennial, loosely tufted, up to 1 m high. Leaf blades 20–140 mm long, 2,8–6,5 mm wide. Spikelets 2,4–2,8(–3,2) mm long; upper glume with awns to 0,3 mm long, 5–7-nerved; female-fertile (upper) lemma with awns 1,0–2,4 mm long and 5-nerved. Open hillsides. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

tenuissima Stapf

Perennial, tufted, up to 1,1 m high. Leaf blades 20–80 mm long, 3–6 mm wide. Spikelets 1,1–1,5(–1,6) mm

long, 0,5 mm wide. Inflorescence open and loose, 80–200 mm long and often almost as wide; hairs 2–4 mm long on pedicel at base of spikelet; lower glume reduced to a scale 0,1 mm long; upper glume 5-nerved, awnless and not grooved; female-fertile (upper) lemma 3–5-nerved, awn white (1,5–)4,0–10,0 mm long. *Flowering April to June*. Grassland and bush, often near cultivation and water. *Scheepers 1153*.

W S C N E

Merxmuellera Conert (s. Afr.: 16 spp.) 9902043

Barker. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 213–218.

davyi (C.E. Hubb.) Conert
(= *Danthonia davyi* C.E. Hubb.)

Perennial, tufted, up to 1 m high. Leaf blades up to 600 mm long, up to 1,5 mm wide, dead leaves breaking off above sheath mouth and remains curling into a tight spiral. Spikelets 15–17 mm long (including awns), 6–8 mm wide (including awns). Panicle dense, 150–250 mm long; spikelets 2–4-flowered; glumes 11–13 mm long, 1-nerved; lemmas 7,5–9,0 mm long, including lemma lobes which are adnate to central awn for a quarter to three-quarters of their length, ending in a short bristle; lemma body with 3 unequally spaced tufts of white hairs on either side of central nerve, the most basal tuft being marginal and closer to base of lemma than other 2 tufts which are equidistant, or almost so, from lemma base; central awn 12 mm long. *Flowering September*. Xeric, rocky, mountainous areas. *Davidson & Mogg 33315*.

W S C N E

drakensbergensis (Schweick.) Conert
(= *Danthonia drakensbergensis* Schweick.)

Perennial, tufted, up to 1 m high. Leaf blades up to 300 mm long, up to 1,3 mm wide, old leaves breaking off close to sheath mouth, and remaining leaf bases splitting along midrib, the 2 halves curling away from each other. Spikelets 12–17 mm long (including awns); 8–13 mm wide. Panicle 80–180 mm long, loosely contracted and interrupted; spikelets (5–)6–8-flowered; glumes 13–17 mm long, 1–3-nerved; lemmas 6,5–9,0 mm long, including lobes 3,5–5,0 mm long, adnate to central awn for approximately half their length; lemma backs with 3 tufts of equally spaced white hairs on either side of central nerve, marginal tuft the most basal; central awn 9–12 mm long, geniculate at point where lemma lobes detach from awn. *Flowering October to March*. Mesic sites in streambanks, mud patch communities and rocky outcrops of alpine belt, in areas where soil is deeper than in surrounding areas. *Ellis 4311*.

W S C N E

macowanii (Stapf) Conert
(= *Danthonia macowanii* Stapf)

Perennial, tufted, up to 1,3 m high. Leaf blades up to 650 mm long, up to 1,3 mm wide, old leaves breaking off above sheath mouth, remaining leaf bases some-

times splitting along midrib and the 2 halves curling away from each other. Spikelets to 13 mm long (including awns); to 6 mm wide. Panicle 170–270 mm long, loosely contracted, interrupted and shortly branched; spikelets (2–)3–4-flowered; glumes 9–14 mm long, 1–3-nerved; lemmas 10 mm long, including central awn to which lemma lobes are usually fully adnate, lateral bristles absent; lemma backs with 3 equally spaced tufts of white hairs on either side of central nerve, tuft on margin being most basal; central awn 5–8 mm long, seldom geniculate. *Flowering July to January*. In montane and subalpine regions at altitudes between 1 500 and 3 000 m. *Codd & De Winter 3239*.

W S C N E

Microchloa R. Br. (s. Afr.: 3 spp.) 9902940

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 218–219.

caffra Nees

Perennial, densely tufted (with most leaves basal), up to 500 mm tall. Leaf blades 20–100 mm long, old leaf sheaths splitting into fibres. Spikelets 3,0–5,5 mm long. Spike 40–150 mm long, 1–2 mm wide; anthers 1,2–2,0 mm long. Caryopsis terete, over 1 mm long. *Flowering October to April*. Shallow soils on rocky outcrops. *Smook 4435*.

W S C N E

kunthii Desv.

Perennial (growing in compact mats), densely tufted (with most leaves basal), up to 430 mm tall. Leaf blades 10–80 mm long. Basal sheaths splitting into fibres. Spikelets 2,5–4,0 mm long. Spikes 20–150 (–250) mm long, rarely wider than 1 mm; anthers 0,5–1,2 mm long. Caryopsis 1,5 mm long. *Flowering November to April*. Shallow soil on rocky outcrops, open sandy patches or sometimes even on waterlogged, clayey soil. *De Winter & Codd 557*.

W S C N E

Microstegium Nees (s. Afr.: 1 sp.) 9900550

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 220.

nudum (Trin.) A. Camus
(= *M. capense* (Hochst.) A. Camus)

Trailing annual (forming tangled mats), up to 600 mm tall. Leaf blades up to 80 mm long, 2–7 mm wide. Spikelets 3,5–4,5 mm long (sessile and pedicellate alike). Inflorescence of 3 or 4 slender racemes, solitary or paired on central axis; lower glume of sessile spikelets concave on back. *Flowering January to May*. Moist shady places in forests. *De Winter 93*.

W S C N E

Miscanthus Andersson (s. Afr.: 2 spp.) 9900380

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 221.

junceus (Stapf) Pilg.

(= *Miscanthidium junceum* (Stapf) Stapf,
= *Miscanthidium teretifolium* (Stapf) Stapf)

Perennial, tufted, up to 1,8 m high. Leaf blades 500–1000 mm long, up to 3 mm wide (terete). Spikelets 4–5 mm long. *Flowering November to June*. Riverbanks and vleis. *Smook 3169*.

W	S	C	N	E
---	---	---	---	---

Monocymbium Stapf (s. Afr.: 1 sp.) 9900750

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 222–223.

ceresiiforme (Nees) Stapf

Graceful perennial, sometimes shortly rhizomatous and tufted (loosely or densely), up to 1 m high, reddish or purple-tinged when flowering. Leaf blades 50–180 mm long, 2–6 mm wide. Spikelets (sessile and pedicellate) 3,5–4,0 mm long. Racemes solitary, partly enclosed in reddish brown boat-shaped spatheole. *Flowering January to June*. Open grassland and hillsides, often in wet places. *Theron 3575*.

W	S	C	N	E
---	---	---	---	---

Mosdenia Stent (s. Afr.: 1 sp.) 9902741

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 223–224.

leptostachys (Ficalho & Hiern) Clayton

(= *M. phleoides* (Hack.) Stent)

Perennial, rhizomatous (rhizome creeping), up to 0,9 m high. Leaf blades 20–80 mm long, 2–3 mm wide. Spikelets 2,50–3,75 mm long. Inflorescence narrowly spike-like; spikelets awnless, not clustered; glumes glabrous, 1-nerved; bisexual floret 1. *Flowering January to April*. Bushveld, usually on sandy soil. *Codd 825*.

W	S	C	N	E
---	---	---	---	---

Odontelytrum Hack. (s. Afr.: 1 sp.) 9901430

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 225.

abyssinicum Hack.

Perennial, hydrophyte, up to 1 m high. Leaf blades 100–200 mm long, 7 mm wide. Culms soft, spongy. Spikelets to 12 mm long, 3 mm wide. Inflorescence a raceme, embraced below by uppermost leaf sheath; spikelets solitary, subtended by a lobed herbaceous scale, with 1 lobe free and awnlike, up to 20 mm long. *Flowering December to February*. In stagnant and running water. *Du Toit 1083*.

W	S	C	N	E
---	---	---	---	---

Odyssea Stapf (s. Afr.: 1 sp.) 9903451

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 225–226.

paucinervis (Nees) Stapf

(= *Diplachne cinerea* Hack.)

Mat-forming perennial rhizomatous (with dense tufts of spiny glaucous shoots at nodes), up to 0,75 m high. Rhizomes very long, well developed, deeply buried. Leaf blades 10–60 mm long, 1–5 mm wide. Spikelets 5–9 mm long. Panicle 15–70 mm long; spikelets fewer than 15, 4–9-flowered. *Flowering October to May*. Brackish or saline soil, in or near pans or rivers. *Smook 5279*.

W	S	C	N	E
---	---	---	---	---

Oplismenus P. Beauv. (s. Afr.: 3 spp.) 9901150

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 227–228.

burmannii (Retz.) Beauv.

Prostrate annual, up to 250 mm tall. Leaf blades 10–60 mm long, 5–20 mm wide. Spikelets 2,5–3,5 mm long, hairy; glumes with minutely scabrid awns 3–20 mm long. *Flowering February to April*. In forest shade. *Raal 52*.

W	S	C	N	E
---	---	---	---	---

hirtellus (L.) Beauv.

Prostrate perennial (sometimes climbing in undergrowth), up to 0,8 m high. Leaf blades up to 130 mm long, 4–20 mm wide. Spikelets 2–4 mm long. Inflorescence of racemes, with 6–20 spikelets; glumes with smooth sticky awns 3–14 mm long. *Flowering January to June (rarely at other times)*. In forest shade. *Loxton 414*.

W	S	C	N	E
---	---	---	---	---

undulatifolius (Ard.) Roem. & Schult.

Trailing perennial, up to 500 mm tall. Leaf blades 10–70 mm long, 4–15 mm wide. Spikelets 2,5–4,0 mm long. Inflorescence of 2–6 fascicled spikelets in wedge-shaped clumps; glumes with smooth, sticky awns 7–14 mm long. *Flowering January to July*. In forest shade. *Davidse 5827*.

W	S	C	N	E
---	---	---	---	---

Oropetium Trin. (s. Afr.: 1 sp.) 9903200

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 228–229.

capense Stapf

Dwarf perennial, densely tufted, up to 100 mm tall (rarely to 170 mm). Leaf blades 10–40 mm long, up to 1,2 mm wide. Spikelets 2,5–4,0 mm long. Spikes solitary, straight or curved; spikelets sunk into rhachis; upper glume 2–3 mm long. *Flowering December to May*. In shallow soil in open places or rocky outcrops

or in crevices and hollows on exposed rocks, often in badly grazed or disturbed veld. *Van Rooyen 3130*.

W S C N E

Oryza L. (s. Afr.: 3 spp.) 9901580

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 229–230.

longistaminata A. Chev. & Roehr.

Perennial, hydrophyte and rhizomatous (rhizomes extensive, branched), up to 1,2 m high (culms spongy). Leaf blades up to 450 mm long, up to 15 mm wide; ligule 15–45 mm long, acute. Spikelets 7–9 mm long (awns 40–80 mm long). *Flowering October to May*. Swamps and floodplains, often in deep water. *De Winter 745*.

W S C N E

Oxytenanthera Henkel (s. Afr.: 1 sp.) 9904770

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 232.

abyssinica (A. Rich.) Munro

Rhizomatous, up to 10 m high (culms 50–100 mm in diameter). Bamboo with drooping culms and clustered leaf-bearing branches; sheaths of culm leaves with dense hairs on inner surface. Leaf blades 50–250 mm long, 10–30 mm wide. *Flowering unknown in southern Africa*. In shade of large trees (only a single stand in Venda). *Smook & Soderstrom 1983*.

W S C N E

Panicum L. (s. Afr.: 39 spp.) 9901160

Smook. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 233–243.

aequinerve Nees

Short-lived perennial or annual, scrambler (trailing, decumbent and rooting at nodes). Culms up to 1 m long. Leaf blades 30–110 mm long, 3–10(–12) mm wide. Spikelets 2,5–3,5(–4,0) mm long. Inflorescence sparsely branched, usually spreading at maturity, sometimes contracted, branches naked for a long distance, with 2–5 spikelets crowded at apex, exerted from uppermost leaf; spikelets acuminate, pubescent, lower glume as long as spikelet, 5(–7)-nerved; upper glume 7-nerved; lower floret sterile, lemma 5-nerved, palea reduced; female-fertile (upper) lemma pale and shiny. *Flowering September and January to June*. Clay or sand on shallow soils of forest margins or open grasslands, mainly in damp places and around boulders. *Meeuse 9902*.

W S C N E

arcurameum Stapf

Annual, tufted (erect or geniculate), up to 0,6 m high. Leaf blades up to 100 mm long, up to 7 mm wide.

Spikelets 2,0–2,5 mm long. Inflorescence obovate, base usually enclosed by uppermost leaf, branches usually short, rigid and ascending, densely scabrid with prickles 0,10–0,15 mm long just below point of attachment of spikelets, which are spreading and distant from one another; apex of lower glume and lower lemma often tinged purple; lower glume up to two-thirds the length of spikelet; upper glume and lower lemma (7–)9-nerved; lower floret sterile with a reduced palea; female-fertile (upper) lemma pale to dark, shiny. *Flowering January*. Sandy soils, black turf in disturbed areas. *Ellis 3881*.

W S C N E

coloratum L. var. coloratum

(= *P. coloratum* L. var. *makarikariense* Gooss.)

Perennial, tufted (erect, geniculate or occasionally decumbent), up to 1 m high. Leaf blades up to 300 mm long, 5–10 mm wide, lower leaf sheaths glabrous to densely appressed-hairy, bulbous-based hairs present or absent, leaves usually mainly cauline, broad. Spikelets 2,5–3,0 mm long. Inflorescence branches spreading with spikelets distant; lower glume ovate, half to two-thirds the length of spikelet; upper glume and lower lemma 7(–9)-nerved; lower floret male, with palea well developed; female-fertile (upper) lemma pale to dark, shiny. *Flowering October to May*. Sandy or clay soils in riverbeds, drainage courses, around pans or in depressions. *Smook 4365*.

W S C N E

deustum Thunb.

Perennial, shortly rhizomatous and tufted (sometimes rooting at lower nodes), up to 2 m high. Leaf blades 150–480 mm long, 5–35(–45) mm wide, leaves mainly cauline, cordate or straight at base. Culms slender or robust, branched or unbranched. Spikelets 3,5–5,0 (–5,5) mm long. Inflorescence branches usually with clavellate hairs; lower glume half to two-thirds the length of spikelet, separated by a short internode from rest of spikelet; upper glume 7-nerved; lower floret male, lemma 5-nerved and palea well developed; female-fertile (upper) lemma pale, dull or shiny. *Flowering September to April*. Often in moist soils, shady places or rocky hillsides on clay, loam or sandy soils. *Van der Schijff 1876*.

W S C N E

dewinteri J.G. Anderson

Perennial, tufted (erect, sometimes rooting at lower nodes), up to 1 m high, shrub-like. Leaf blades (young leaves) 200–500 mm long, 1–6 mm wide. Culms hard and wiry, well branched, particularly in upper portion, leaf blades of older portion of culms falling off early. Spikelets 3,5–4,0 mm long. Inflorescence sparsely branched with secondary branches appressed; lower glume narrowly ovate, 3-nerved, two-thirds the length of spikelet; upper glume and lower lemma 5–7-nerved; lower floret sterile, with palea reduced; female-fertile (upper) lemma pale to light brown, shiny. *Flowering January to May*. Rocky outcrops, in crevices, along forest margins and on wooded rocky slopes (Soutpansberg and Blouberg ranges). *Raal 377, Raal 143*.

W S C N E

dregeanum Nees

Perennial, tufted, up to 1,1 m high. Leaf blades 140–350(–500) mm long, 1,5–3,0 mm wide. Basal sheaths silky pubescent, leaves mostly basal. Spikelets 2,0–2,5(–3,0) mm long. Inflorescence 80–150 mm long; spikelets usually strongly flushed with purple; glume tips shortly mucronate and recurved; lower glume half to three-quarters the length of spikelet; upper glume 7-nerved; lower floret male, lemma 5-nerved and palea well developed; female-fertile (upper) lemma pale and shiny. *Flowering November to April*. Usually in wet places, frequently in vleis, sometimes on hillsides. *Ellis 4907*.

W S C N E

ecklonii Nees

Perennial, shortly rhizomatous and tufted, up to 0,8 m high. Leaf blades 60–200(–260) mm long, 3–8 mm wide, leaves mainly basal, flat, bright green, usually densely hairy with long tubercle-based hairs. Spikelets 2,5–3,5 mm long, usually flushed with purple; glumes and lower lemma pectinate at apex; lower floret sterile with palea absent; female-fertile (upper) lemma dull, often flushed purple and shortly hairy towards apex. *Flowering September to April*. Sandy soils and often in moist areas in mountainous regions subjected to burning. *Kluge 1968, Ellis 2816*.

W S C N E

heterostachyum Hack.

Annual, erect, loosely tufted, up to 0,8 m high. Plant base sometimes decumbent, leaves thin, amplexicaul. Leaf blades 80–120 mm long, 10–25 mm wide. Spikelets to 1,5 mm long. Inflorescence branches with flat glandular patches; spikelets asymmetrical, ovate; glumes as long as spikelets, sparsely to densely pubescent; upper glume and lower lemma 5-nerved; lower floret male with palea well developed; female-fertile (upper) lemma pale, densely verruculose. *Flowering January to May and in August*. Poor sandy soils in wooded grassland, seasonally flooded pans, rocky hills and in disturbed areas. *Ellis 3575*.

W S C N E

hymeniocentrum Nees

(= *P. filiculme* Schinz,
= *P. hymeniocentrum* Nees var. *glandulosum* Nees)

Scrambler and hydrophyte (often rooting at lower nodes), culms up to 2 m long. Leaf blades 12–70 mm long, 1,2–5,0(–10) mm wide. Spikelets 2,0–2,5(–3,0) mm long. Inflorescence branches sparsely branched, with clavellate hairs usually present, rarely absent; spikelets often purple-tinged; lower glume narrowly ovate, half to two-thirds the length of spikelet; upper glume 7–9-nerved; lower floret male or sterile, lemma (7–)9–11-nerved, palea usually well developed, sometimes reduced; female-fertile (upper) lemma granulose, especially towards apex. *Flowering December to May*. Moist organically rich soils of river margins and perennial swamps, in or near water. *Codd 7927*.

W S C N E

infestum Peters

Perennial, shortly rhizomatous and tufted (erect), up to 2 m high, usually hairy with tubercle-based hairs, rarely glabrous. Leaf blades 150–500 mm long, 2–10 mm wide. Spikelets 3,5(–4,0) mm long. Inflorescence branched sparsely, primary branches ascending, secondary branches usually absent; spikelets acute, somewhat leathery, often with a groove on back; closed spikelets with only central nerve visible on lemma of lower floret; lower floret male and palea well developed; female-fertile (upper) lemma conspicuously transversely rugose. *Flowering November to February and in May*. Clay or sandy soils in seasonally damp places, rocky hillsides and disturbed areas. *Acocks 16687*.

W S C N E

kalaharensis Mez

Robust perennial, shortly rhizomatous and tufted (hard and dense), up to 2,5 m high. Leaf blades up to 350 mm long, up to 8 mm wide. Basal sheaths densely hairy, leaves mainly basal, flat or rolled, upper leaf surface densely covered with short hairs, sheath mouth with dense, long to woolly hairs on abaxial side. Spikelets 3,2–4,2 mm long; lower glume broadly ovate, up to half the length of spikelet, 3–5-nerved; upper glume and lower lemma 7–9-nerved; lower floret male with palea well developed; female-fertile (upper) lemma pale and dull. *Flowering December to April*. Kalahari sands and disturbed places such as roadsides. *Ferguson 118*.

W S C N E

laticomum Nees

Annual, scrambling, decumbent to semi-erect, rooting at nodes, culms up to 2 m long. Leaf blades up to 100 mm long, (5–)8–28 mm wide. Leaves abruptly or asymmetrically narrowed at base. Spikelets 1,5–2,5 mm long. Inflorescence extending beyond uppermost leaf, open, finely and usually profusely branched; lower glume half the length of spikelet, separated from rest of spikelet by a short internode; upper glume 5-nerved; lower floret sterile, lemma 5–7-nerved and palea reduced; female-fertile (upper) lemma pale and granulose. *Flowering January to April and June to July*. Sandy soils in dense shade and wet areas in forests. *Ellis 3231*.

W S C N E

maximum Jacq.

Usually perennial or annual (occasionally), loosely to densely tufted (erect and geniculate, rooting at nodes), up to 2 m high. Leaf blades 6–40(–100) mm long, 4–12(–35) mm wide. Spikelets 2,5–3,0(–4,0) mm long. Inflorescence usually much-branched with secondary branches well developed and flexuous; spikelets blunt or acute, rounded on back, cartilaginous; the closed spikelet with many nerves clearly visible on lemma of lower floret; lower floret usually male with palea well developed; female-fertile (upper) lemma pale and conspicuously transversely rugose. *Flowering November to July*. In shady places, especially under canopy of trees, in cultivated areas and along riverbanks, but well adapted to a variety of conditions. *Ellis 3920*.

W S C N E

monticola Hook. f.

Perennial, trailing, decumbent, rooting at nodes, culms 1 m long. Leaf blades up to 150 mm long, (5–)10–25 mm wide. Spikelets 2,2–3,5(–4,0) mm long. Inflorescence sparsely and irregularly branched, exerted from uppermost leaf; lower glume broadly ovate, a quarter to half the spikelet length, 0 or 1-nerved; upper glume and lower lemma 5-nerved; lower floret sterile with palea absent or rudimentary; female-fertile (upper) lemma pale, smooth and shiny. *Flowering January, April, and June*. Forest shade (in forests around Magoe-baskloof and Duiwelskloof). *Scheepers 399*.

W S C N E

natalense Hochst.

Perennial, shortly rhizomatous and tufted (densely), up to 500 mm tall. Plant base knotty, leaves mainly basal, tightly folded or flat; spikelets nearly rounded in outline. Leaf blades up to 500 mm long, up to 3,5 mm wide. Spikelets 1,7–2,2 mm long; lower glume half to three-quarters the spikelet length; upper glume and lower lemma 5-nerved; lower floret male or sterile, palea membranous, well developed or reduced in width only, not longer than lemma; female-fertile (upper) lemma pale, sparsely to densely papillose. *Flowering October to April*. Sandy loam or sandy soils in well drained or shallow soils in rocky areas, often in burnt veld. *Hemm 418*.

W S C N E

novemnervae Stapf

Annual, loosely tufted (geniculate), up to 0,6 m high. Leaf blades up to 200 mm long, up to 15 mm wide. Bulbous-based hairs at least on leaf sheaths. Spikelets 2,0–2,5 mm long. Inflorescence extending beyond tip of uppermost leaf, but base enclosed in uppermost leaf, broadly ovate, branches long, flexuous, spreading, densely scabrid with prickles 0,10–0,15 mm long just below spikelets; lower glume up to two-thirds the length of spikelet; upper glume and lower lemma (7–)9-nerved; lower floret sterile with palea conspicuously reduced; female-fertile (upper) floret pale to dark, smooth and shiny. *Flowering December to April*. Moist clayey loams, brackish soils along drainage lines and in depressions where water collects. *Nel 4994*.

W S C N E

repens L.

Perennial, occasional hydrophyte, rhizomatous and tufted (erect to decumbent, sometimes floating), up to 1 m high. Leaf blades 70–250 mm long, 2–8 mm wide, leaves mainly cauline, distichous, ascending, usually pungent. Spikelets 2–3 mm long. Inflorescence narrowly oblong, sparsely to moderately branched, usually ascending; lower glume broadly ovate, up to half the length of spikelet; upper glume and lower lemma 7–9-nerved; lower floret usually male, lemma with broadest interspaces between nerves not only adjacent to central nerve, palea well developed; female-fertile (upper) lemma pale to yellowish, shiny. *Flowering October to June*. Wet sandy soils, sometimes in either fresh or brackish water. *Ellis 3919*.

W S C N E

repentellum Napper

Perennial (to subperennial), hydrophyte, rhizomatous, and stoloniferous (erect or decumbent), up to 0,6 m high. Leaf blades 50–120 mm long, 3–5 mm wide, slender leaves mainly cauline. Spikelets 2,0–3,5 mm long. Inflorescence closely associated with uppermost leaf, narrow and sparsely branched, ascending; lower glume broadly ovate; upper glume and lower lemma 7-nerved; lower floret usually male, lemma with broadest interspaces of nerves adjacent to central nerve, and palea well developed; female-fertile (upper) lemma pale, shiny. *Flowering January to May*. Black or grey soils around vleis and lakes or in water. *Smook 4906*.

W S C N E

schinzii Hack.

(= *P. laevifolium* Hack. var. *laevifolium*)

Annual, tufted (erect to sprawling, occasionally rooting at nodes), up to 0,9 m high. Leaf blades up to 300 mm long, up to 20 mm wide. Lower sheaths glabrous or sparsely hairy at extreme base, leaves dark green. Spikelets 2,0–2,5(–3,5) mm long. Inflorescence well exerted from uppermost leaf, open, oblanceolate to narrowly obovate, profusely branched with many spikelets; spikelets blunt; tips of glumes not recurved; lower glume broadly ovate; upper glume and lower lemma 9–11-nerved; lower floret male or both male and sterile occurring in the same inflorescence, palea well developed; female-fertile (upper) lemma pale to yellow, shiny. *Flowering November to May*. Moisture loving, in sandy and clay soils of seepage areas, depressions where water collects and in cultivated lands. *Smook 4271*.

W S C N E

stapfianum Fourc.

Perennial, tufted, up to 0,9 m high, with bulbous-based hairs present or absent. Leaf blades up to 400 mm long (but usually shorter); to 5 mm wide, leaves mainly basal, upper leaf surface usually densely papillate. Spikelets to 3 mm long; lower glume half to two-thirds the length of spikelet; upper glume and lower lemma 7–9-nerved; lower floret male with palea well developed; female-fertile (upper) lemma pale yellow to flushed greyish, smooth. *Flowering November to May*. Damp area on heavy or sandy soils, disturbed or calcareous areas and occasionally rocky dry areas. *Smook 2357*.

W S C N E

subalbidum Kunth

(= *P. glabrescens* Steud.)

Short-lived perennial or annual, hydrophyte (occasionally) or tufted (erect to decumbent and rooting at nodes), up to 2 m high, slender to robust. Leaf blades 200–500 mm long, 6–18 mm wide, upper leaf surface with large, usually white prickles always visible on upper leaves, papillae sometimes present. Spikelets 2,5–3,5 mm long. Inflorescence sparsely to moderately branched with spikelets appressed to branches; spikelets acuminate; lower glume broadly ovate, up to a third the length of spikelet; upper glume and lower lemma 7–9-nerved; lower floret sterile with palea ab-

sent or poorly developed; female-fertile (upper) lemma pale to yellowish, shiny. *Flowering October to April*. Usually on clay soils in disturbed areas, in or near water, along rivers and swamps. *Smook 4209*.

W S C N E

volutans J.G. Anderson

Annual, loosely tufted (erect to decumbent and rooting at nodes), up to 0,75 m high. Leaf blades 230 mm long, 0,5–10,0 mm wide, leaves hispid with bulbous-based hairs. Spikelets (5,5–)6,0–6,5(–7,0) mm long. Inflorescence large, open, spreading and extending beyond tip of uppermost leaf with base often enclosed in uppermost leaf, branches naked for long distance before the 1–3 spikelets at tips; spikelets long-acuminate; upper glume 7–9-nerved; lower floret sterile, lemma 7-nerved, and palea reduced; female-fertile (upper) lemma yellowish grey with very conspicuous nerves. *Flowering January to March*. Mainly in black turf in cultivated and disturbed areas and areas of high moisture. *Scheepers 1478*.

W S C N E

Paspalidium Stapf (s. Afr.: 2 spp.) 9901090

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 244–245.

obtusifolium (Delile) Simpson

(= *P. platyrrhachis* C.E. Hubb.)

Perennial, hydrophyte and rhizomatous (rhizome floating and spongy) or stoloniferous (culms prostrate and rooting at nodes), up to 0,6 m high. Leaf blades 30–200 mm long, 4–12 mm wide, bluntly acute to broadly obtuse, often notched at rounded apex and splitting along midrib. Spikelets 3,0–3,5 mm long, acute and narrowly ovate. Central axis of inflorescence broadly winged and ribbon-like, 3–5 mm wide. *Flowering September to May*. On marshy soils or shallow water in pans. *Galpin sub PRE 34380*.

W S C N E

Paspalum L. (s. Afr.: 6 spp.) 9901070

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 245–247.

dilatatum Poir.*

Perennial, rhizomatous (rhizome short and creeping) or tufted, up to 1,8 m high. Leaf blades 90–350(–450) mm long, 6–14 mm wide; ligule conspicuous, membranous, 2–8 mm long. Basal sheaths glabrous or sometimes hairy. Spikelets 3–4 mm long, 2,0–2,5 mm wide. Inflorescence with central axis 30–200 mm long; racemes 4–9, scattered on axis; spikelets fringed with white hairs and arranged in 4 rows on one side of rachis. *Flowering October to May*. Usually in damp places, most often in disturbed areas such as roadsides, gardens and cultivated lands. Native to South America. *Smook 4134*.

W S C N E

distichum L.

(= *P. paspalodes* (Michx.) Scribn.)

Perennial, hydrophyte (rooting at nodes), or rhizomatous or stoloniferous (mat-forming), up to 300 mm tall. Leaf blades 20–220 mm long, 3–8 mm wide. Spikelets 2,5–3,5 mm long, 1,3–1,5 mm wide. Racemes usually 2; spikelets arranged in 2 rows, glabrous, lanceolate, tips acute; lower glume usually developed into a small triangular scale or sometimes absent. *Flowering November to May*. Always in or near salt or fresh water on riverbanks, in vleis and along pan edges in muddy soil, sand or black turf. *Smook 6213*.

W S C N E

notatum Flügge*

Perennial, long rhizomatous and tufted (often decumbent), up to up to 0,6 m high. Rhizome well developed, almost woody, clad in overlapping leaf sheaths. Leaf blades 60–240 mm long, 4–10 mm wide. Spikelets 2,8–3,7 mm long, 2,0–2,8 mm wide. Racemes 2 (occasionally 3), 25–130 mm long; rhachis often zigzag; spikelets glabrous, glossy, tips rounded, more than 1,5 times longer than wide and arranged in 2 rows. *Flowering November to April*. In high rainfall areas on sandy or clayey soil, often in disturbed places and cultivation. Native to South America. *Ellis 1753*.

W S C N E

scrobiculatum L.

(= *P. commersonii* Lam.,

= *P. orbiculare* Forst.,

= *P. polystachyum* R. Br.)

Perennial, hydrophyte (occasionally) or rhizomatous (shortly) or stoloniferous (sometimes) or tufted (loosely, erect or decumbent), up to 0,7 m high. Leaf blades 150–200 (–380) mm long, 6–8(–10) mm wide. Spikelets 2,0–2,5 mm long, 1,8–2,4 mm wide. Racemes 1–5, 30–80(–150) mm long; rhachis linear and almost as wide as raceme; spikelets glabrous, ovate, arranged in 2 rows. *Flowering September to May*. Moist, semiswampy areas or on fertile well-drained soils, often in disturbed places and abandoned lands. *Smook 4879*.

W S C N E

urvillei Steud.*

Perennial, rhizomatous and tufted (coarsely and erect), up to 2,5 m high. Leaf blades 250–600 mm long, 4–15 mm wide; ligule conspicuous, membranous, 2–9 mm long. Basal sheaths densely hairy. Spikelets 1,6–2,8 mm long, 1,2–1,4 mm wide. Inflorescence with central axis 120–300 mm long; racemes 10–30, closely spaced on axis; spikelets arranged in 4 rows, fringed with white hairs to give a woolly appearance. *Flowering October to April*. Near water or in moist places, along water furrows, roadsides and streambanks on sandy loam. Native to South America. *Liebenberg 8769*.

W S C N E

Pennisetum Rich. (s. Afr.: 13 spp.) 9901390

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 247–251.

clandestinum Chiov.*

Perennial, rhizomatous and stoloniferous, up to 1,2 m high, creeping vigorously by rhizomes and stolons. Leaf blades 50–300 mm long, 3–7 mm wide. Culms closely sheathed, with abundance of bright green leaves. Spikelets 10–20 mm long. Inflorescence partly enclosed in uppermost leaf sheath; filamentous stigmas and stamens with long filaments clearly visible at flowering time. *Flowering August to April*. Requires high rainfall. Native to east Africa. *Crook sub PRE 33508*.

W	S	C	N	E
---	---	---	---	---

glaucum (L.) R. Br.

Annual, tufted, up to 3 m high. Leaf blades 300–500 mm long, 20–50 mm wide. Spikelets ± 7 mm long, 5 mm wide. Inflorescence a false spike 200–500 mm long, 30 mm wide; each spikelet cluster on a hairy stalk ± 5 mm long; involucre bristles shorter to as long as spikelets, only inner bristles plumose. *Flowering January to April*. Widely cultivated in semi-arid tropics, may grow with as little as 250 mm rainfall per annum. *Hardy, Retief and Herman 5315*.

W	S	C	N	E
---	---	---	---	---

macrourum Trin.

Perennial, tufted, up to 2,5 m high. Rhizome creeping, often branched. Leaf blades 250–600 mm long, 4–11 mm wide. Spikelets 4–6 mm long, 1 mm wide. Inflorescence light green or straw-coloured, often tinged with purple, 120–250 mm long; involucre of up to 20 bristles which are mostly as long as spikelets, 1 bristle longer than the rest; lower glume minute or absent, upper glume a quarter to a third the length of spikelet; lower floret reduced to a lemma; female-fertile (upper) lemma similar to lower lemma. *Flowering November to May*. Near streams or damp places. *Smook 3167*.

W	S	C	N	E
---	---	---	---	---

natalense Stapf

Perennial, tufted, up to 2 m high. Leaf blades 100–400 mm long, 3–8 mm wide. Spikelets 2,5–3,5 mm long, 1 mm wide. Inflorescence 70–220 mm long; most involucre bristles twice as long as spikelets; lower floret male, lower palea almost as long as lemma. *Flowering February to June*. Forms large tufts in water on riverbanks and vleis. *Van der Schijff 3890*.

W	S	C	N	E
---	---	---	---	---

purpureum Schumach.*

Perennial, tufted, up to 7,5 m high, often forming tall bamboo-like clumps. Leaf blades 30–400 mm long, 10–30 mm wide. Spikelets 4,5–7,0 mm long, 1 mm wide. Involucre of up to 40 bristles, inner few loosely plumose towards base; lower floret usually male; similar to *P. macrourum* in other spikelet characters. *Flowering January to June*. Riverine sites, valley floors, forest margins, with a preference for rich soils. Native to tropical Africa. *Brynard & Pienaar 4249*.

W	S	C	N	E
---	---	---	---	---

setaceum (Forssk.) Chiov.*

Perennial, tufted, 1 m high. Leaf blades 20–40 mm long, 1–2 mm wide. Spikelets 4,0–6,5 mm long, 3 mm wide. Inflorescence purple, 100–250 mm long; involucre bristles, mostly ± 20 mm long, 4–5 times as long as spikelets, inner bristles plumose. *Flowering November to July*. A ruderal on stony slopes and dry open places. Native to North Africa. *Balsinhas 3490*.

W	S	C	N	E
---	---	---	---	---

sphacelatum (Nees) T. Durand & Schinz

Perennial, tufted, up to 0,9 m high. Leaf blades 100–400 mm long, 2–3 mm wide, often filiform. Spikelets ± 3 mm long, 1 mm wide. Inflorescence straw-coloured, 50–150 mm long, hairy for some distance below inflorescence; most involucre bristles equalling to twice as long as spikelets. *Flowering November to April*. Wet areas, vleis, usually hillsides, moist or clay soil. *Devenish 1517*.

W	S	C	N	E
---	---	---	---	---

thunbergii Kunth

Perennial, tufted, up to 0,8 m high. Leaf blades 100–400 mm long, 4–7 mm wide. Spikelets 3 mm long, 1 mm wide. Inflorescence 30–50 mm long, purple; lower glume absent; upper glume a fifth to a quarter as long as spikelet; lemmas mucronate to nearly awned; anther lobes with a minute tuft of hairs at apex; other spikelet characters as for *P. macrourum*. *Flowering October to June*. Grows in wet places, riverbanks, vleis. *Smook 2575*.

W	S	C	N	E
---	---	---	---	---

unisetum (Nees) Benth.

(= *Beckeropsis uniseta* (Nees) K. Schum.)

Perennial, tufted, up to 2,4 m high. Leaf blades 200–450 mm long, 5–10 mm wide. Spikelets 2,5–3,5 mm long, 1 mm wide. Inflorescence a compound panicle, branches filiform, usually in groups of 2–5; spikelets subtended by a single bristle 3–4 times as long as spikelet. *Flowering March to June*. Near water and in shady places. *Preller 166*.

W	S	C	N	E
---	---	---	---	---

villosum R. Br. ex Fresen.*

Perennial, tufted, up to 0,9 m high. Leaf blades 8–15 mm long, 3 mm wide. Spikelets 9–14 mm long, 4 mm wide. Inflorescence usually white, 40–100 mm long; involucre bristles nearly all plumose, some 4–5 times as long as spikelet, most of them ± 30 mm long. *Flowering January to May*. Roadsides and disturbed areas. Native to Ethiopia. *Meridith sub PRE 33517*.

W	S	C	N	E
---	---	---	---	---

Pentaschistis (Nees) Spach (s. Afr.:

61 spp.)

9902050

Linder & Ellis. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 253–265.

chippindalliae *H.P. Linder*

Perennial, tufted, up to 500 mm tall, without glands. Leaf blades up to 200 mm long, up to 0,5 mm wide. Spikelets 4,5–7,5 mm long. Inflorescence open and fine; lemmas awned. *Flowering February to March*. Restricted to sour grassland in high-lying ground in eastern Transvaal, probably restricted to quartzites. *Ellis 3451*.

W	S	C	N	E
---	---	---	---	---

natalensis *Stapf*

Perennial, loosely tufted (forming diffuse tussocks), up to 0,8 m high. Leaf blades up to 300 mm long, 1–5 mm wide. Spikelets 6–7 mm long; glume keels with small rounded glands; lemmas awned. *Flowering November to February*. In sour grassland or near forest margins in montane belt. *Meeuse 9986*.

W	S	C	N	E
---	---	---	---	---

Perotis *Ait. (s. Afr.: 3 spp.)*

9902800

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 265–266.

patens *Gand.*

Short-lived perennial or annual, loosely tufted, up to 0,6 m high. Leaf blades 10–70 mm long, 3–12 mm wide. Spikelets 1,2–2,7 mm long, spikelet base flat or rounded, not elongated into a stipe; glumes with purple awns 9–17 mm long. *Flowering January to December*. Dry, poor or sandy soils, in bare ground and disturbed places. *Germishuizen 822*.

W	S	C	N	E
---	---	---	---	---

Phalaris *L. (s. Afr.: 5 spp.)*

9901630

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 267–269.

aquatica *L.**

Perennial, loosely tufted (lateral culms geniculately ascending), up to 1,5 m high. Leaf blades 180–350 mm long, 2–15 mm wide. Spikelets 4,5–7,5 mm long. Panicle 15–110 mm long, 10–25 mm wide, occasionally interrupted at base; glumes broadly winged, margin entire; female-fertile floret densely pubescent; sterile floret usually one, 0,2–2,2 mm long (rarely with a second sterile floret, which is then shorter than 0,5 mm). *Flowering November to April*. Wet ground by streams and channels or as a weed in moist fields. Native to Mediterranean region. *Lawson sub PRE 16648*.

W	S	C	N	E
---	---	---	---	---

arundinacea *L.**

Perennial, rhizomatous (rhizomes scaly, creeping), up to 1,5 m high. Leaf blades 50–200 mm long, 5–15 mm wide. Spikelets 3,5–7,5 mm long. Panicle 70–160 mm long, 10–30 mm wide, often interrupted in lower part; glumes wingless, gradually tapering to tip; female-fertile

tile floret sparsely pubescent; sterile florets 2, 1,2–2,3 mm long. *Flowering November to April*. Marshes, riverbanks, swamp margins and damp hollows in upland areas. Native to northern America. *Codd 3623*.

W	S	C	N	E
---	---	---	---	---

canariensis *L.**

Annual, tufted (culms usually fascicled, erect or geniculately ascending), up to 0,6 m high. Leaf blades 100–260 mm long, 3–12 mm wide. Spikelets 7–8 mm long. Panicle 15–40 mm long, 10–15 mm wide; glumes prominently winged, wing broadening upwards; female-fertile floret pilose; sterile florets 2, $\pm$ equal, 2,5–4,5 mm long, broad and somewhat chaffy. *Flowering October to December*. Ruderals of disturbed areas such as waste places, road verges, cultivated lands and pastures. Possibly a native of northwest Africa and the Canary Islands. *Dryfhout 701*.

W	S	C	N	E
---	---	---	---	---

minor *Retz.**

Annual, loosely tufted (culms erect or geniculately ascending), up to 1 m high. Leaf blades 50–250 mm long, 5–10 mm wide. Spikelets 4–6 mm long. Panicle 20–50 mm long, 10–15 mm wide; glumes evenly winged, keel denticulate-undulate; female-fertile florets pilose; sterile floret one, 1,0–1,8 mm long (occasionally 0,2–0,3 mm long). *Flowering September to January*. Disturbed areas such as cultivated and fallow lands, roadsides and waste places, often in damp situations. Native to Mediterranean region. *Burt Davy sub PRE 9095*.

W	S	C	N	E
---	---	---	---	---

paradoxa *L.**

Annual, tufted (culms fascicled, erect or geniculately ascending), up to 0,6 m high. Leaf blades 50–300 mm long, 2–6 mm wide. Spikelets 5,5–8,2 mm long. Panicle 20–70 mm long, 10–25 mm wide, often enclosed in an inflated leaf sheath; spikelets borne and falling in units of 6 or 7 with 1 female-fertile spikelet surrounded by 5 or 6 sterile spikelets, often reduced to clavate knobs; female-fertile spikelets with reduced sterile florets. *Flowering August to November*. In moist, often poorly drained soils near ponds or irrigation channels, also in cultivated and fallow lands. Native to Mediterranean region. *Ras sub PRE 5982*.

W	S	C	N	E
---	---	---	---	---

Phragmites *Adans. (s. Afr.: 2 spp.)* 9902140

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 269–270.

australis *(Cav.) Steud.*

(= *P. communis* Trin.)

Perennial, long-rhizomatous, up to 0,6–4,0 m high. Leaf blades up to 35 mm long, up to 35 mm wide, leaves cauline, deciduous at base of blade; with a long tapering ligule with fringing hairs; hairs equalling or longer than

membranous base. Culms robust, solitary, not tillering. Spikelets 10–18 mm long. Inflorescences compact, 120–400 mm long; upper glume 5–9 mm long. Lemmas glabrous. *Flowering December to June*. Riverbeds and wet places. *Smook 4784*.

W S C N E

mauritanus Kunth

Perennial, long-rhizomatous, up to 5 m high. Leaf blades up to 30 mm long, 30 mm wide, leaves cauline, deciduous at base of sheath; blades with sharp, rigid tips; ligule with fringing hairs equaling or longer than membranous base. Culms robust, tillering from lower nodes. Spikelets 7–15 mm long. Inflorescence broad and lax, 200–400 mm long; upper glume 3–5 mm long. Lemmas glabrous. *Flowering January to June*. Riverbeds. *Zambatis 1022*.

W S C N E

Poa L. (s. Afr.: 6 spp.)

9904070

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 270–272.

annua L.*

Annual (sometimes biennial), loosely or compactly tufted (culms usually geniculate at base), up to 300 mm tall. Leaf blades 20–50(–140) mm long, 1–5 mm wide, flaccid. Spikelets 4–6 mm long. Panicle roughly pyramidal, 10–120 mm long; branches solitary or paired, spreading horizontally or almost so at maturity; spikelets aggregated in upper half of branches, 3–5-flowered; anthers 0,6–0,8 mm long. *Flowering July to June (usually in the rainy season of a particular region)*. Damp places on roadsides, gardens and waste land or other disturbed areas. Native to Europe. *Smook 4824*.

W S C N E

binata Nees

(= *P. atherstonei* Stapf,
= *P. heterogama* Hack.)

Perennial, rhizomatous (rhizome oblique) or tufted, up to 0,6 m high. Leaf blades 30–200 mm long, 1–5 mm wide, old leaf sheaths splitting into fibres. Spikelets 4–6 mm long. Panicle ovate to pyramidal, 50–150 mm long, branches solitary or binate, less than their own length apart; spikelets aggregated on upper half of branches, 3–5-flowered; lemmas glabrous at base. *Flowering September to May*. Along mountains and escarpment in moist areas. *Codd & De Winter 3238*.

W S C N E

pratensis L.*

(= *P. bidentata* Stapf)

Perennial, loosely to compactly tufted or rhizomatous (rhizome long and wiry), up to 0,6 m high. Leaf blades 60–250 mm long, 2–5 mm wide; ligules truncate, up to 2 mm long. Spikelets 3,0–5,5 mm long. Panicle ovate, 50–200 mm long, lowest branches whorled; spikelets 2–5-flowered, aggregated on upper part of branches; lemma keel and marginal veins pilose; anthers 1,5–2,0

mm long. *Flowering September to January and in April*. Moist shady areas, usually in mountains. Native to Europe. *Devenish 1158*.

W S C N E

trivialis L.*

Perennial, loosely tufted (spreading from a decumbent base) or rhizomatous (stolons creeping and leafy), 0,9 m high. Leaf blades 50–150 mm long, 1–5 mm wide; ligule ovate or oblong-acute, 4–6 mm long. Spikelets 4–5 mm long. Panicle ovate or pyramidal, 75–200 mm long, lowest branches whorled; spikelets 3–5-flowered, aggregated on upper part of branches; lemmas pilose on keel only; anthers $\pm$ 1,5 mm long. *Flowering December and March*. Moist disturbed places. Native to Europe. *Meredith sub PRE 34423*.

W S C N E

Pogonarthria Stapf (s. Afr.: 3 spp.)

9903340

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 272–273.

squarrosa (Roem. & Schult.) Pilg.

Perennial, tufted (or with a short rhizome), up to 1,4 m high. Leaf blades 40–330 mm long, 2,0–5,5 mm wide, leaf sheaths glabrous. Spikelets 3,3–7,8 mm long. Racemes usually falcately curved upwards; spikelets 4–10-flowered; lower glume 0,8–1,5 mm long; upper glume 0,8–1,5 mm long. *Flowering November to May*. Open veld or under trees, in light sandy soil, often in disturbed places. *Smook 2639*.

W S C N E

Polypogon Desf. (s. Afr.: 4 spp.)

9902440

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 274–276.

monspeliensis (L.) Desf.

Annual, up to 500 mm tall. Leaf blades 50–200 mm long, 2–8 mm wide. Spikelets 2–3 mm long (excluding awns); glume awns spreading, up to 7 mm long; lemmas awnless or with a short awn to 2,5 mm. *Flowering September to April*. Damp and disturbed places, often in brackish soils. Native to Europe and Asia. *Codd 636*.

W S C N E

viridis (Gouan) Breistr.*

(= *Agrostis semiverticillata* (Forssk.) C. Christ.,
= *P. semiverticillatus* (Forssk.) Hyl.)

Annual, up to 0,6 m high. Leaf blades up to 150 mm long, up to 7 mm wide. Spikelets 1,5–2,0 mm long. Panicle open, branches ascending; lemmas awnless. *Flowering September to April*. Wet places, especially riverbanks. Native to southern Europe. *Behr 809*.

W S C N E

Prosphytochloa Schweick. (s. Afr.: 1 sp.) 9901561

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 277.

prehensilis (Nees) Schweick.
(= *Potamophila prehensilis* (Nees) Benth.)

Perennial, climber. Leaf blades up to 150 mm long, 5–10 mm wide (scabrid). Spikelets 6–9 mm long. Inflorescence a loose panicle; spikelets with solitary female-fertile florets subtended by minute cuplike glumes and 2 subulate sterile lemmas. *Flowering November to April*. Moist forests, where it climbs in dense masses. *Schweickerdts 1566*.

W S C N E

Pseudechinolaena Stapf (s. Afr.: 1 sp.) 9901010

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 277–278.

polystachya (Kunth) Stapf

Soft slender perennial or annual (often mat-forming), up to 400 mm tall. Leaf blades 10–80 mm long, up to 14 mm wide. Culms prostrate. Spikelets 3.5–5.0 mm long (reduced spikelets often present), burr-like; upper glume usually with stiff hooked hairs. *Flowering August to September and December to April*. In forest shade. *Codd 6843*.

W S C N E

Rendlia Chiov. (s. Afr.: 1 sp.) 9902941

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 281.

altera (Rendle) Chiov.
(= *R. nelsonii* (Stapf) Chiov.)

Perennial, tufted (cushion-like), up to 400 mm tall. Leaf blades 30–250 mm long, narrower than 1.5 mm, leaf bases persistent and becoming fibrous with age. Spikelets 4.0–5.5 mm long. Spike a solitary 'tooth-brush', 20–50 mm long; glumes twice as long as florets. *Flowering September to May*. Shallow humiferous or well-drained sandy soils. *Smook 2571*.

W S C N E

Rottboellia L.f. (s. Afr.: 1 sp.) 9900310

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 283.

cochinchinensis (Lour.) Clayton
(= *R. exaltata* L.f.)

Annual (often robust), up to 3 m high. Leaf blades up to 600 mm long, 10–30 mm wide. Spikelets (sessile and pedicellate) 4–7 mm long. Racemes cylindrical, spikelets sunken; basal sheaths with stiff irritating hairs. *Flowering December to June*. Wet places, often on

black turf soil, and in disturbed places. *De Winter & Codd 608*.

W S C N E

Sacciolepis Nash (s. Afr.: 8 spp.) 9901240

Clayton. 1989. F.Z. 10.3.

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 284–286.

chevalieri Stapf

Perennial, shortly rhizomatous and tufted, 0.9 m high. Leaf blades 50–200 mm long, usually rolled or folded, 1–3 mm wide, leaf sheaths with cross-veins absent or inconspicuous. Spikelets 1.5–2.2 mm long. Panicle spike-like, scanty, sometimes interrupted, 20–160 mm long; spikelets laterally compressed; lower glume two-thirds and upper glume four-fifths the spikelet length. *Flowering October to March*. In wet soils, usually black turf, in swamps, vleis or along streams. *Reid 426*.

W S C N E

curvata (L.) Chase

Short-lived perennial or annual, tufted (prostrate at base, trailing, rooting at lower nodes), up to 0.9 m high. Leaf blades 20–100 mm long, 3–7 mm wide, mostly cauline, narrowly lanceolate, soft and thin. Spikelets 2.5–3.5 mm long. Panicle loosely contracted; spikelets distinctly pedicellate and conspicuously asymmetrical; upper glume more than 5 times longer than lower glume. *Flowering mainly October to April*. In damp shady places along rivers or streams and in forest undergrowth. Occasionally in woodlands and mopane veld. *Ellis 3232*.

W S C N E

spiciformis (A. Rich.) Stapf

(= *S. huillensis* (Rendle) Stapf)

Short-lived perennial or annual, loosely tufted and hydrophyte, up to 250 mm tall. Leaf blades 15–120 mm long, 1–5 mm wide. Spikelets 1.3–1.8 mm long. Inflorescence spike-like; spikelets shortly pedicellate, laterally compressed; lower glume a third to two-thirds the spikelet length; upper glume $\pm$ equalling spikelet. *Flowering March to June*. At high altitudes in sandy soils at water edges, sometimes partly submerged in water. *Van der Schijff 2839*.

W S C N E

typhura (Stapf) Stapf

(= *S. cinereo-vestita* (Pilg.) C.E. Hubb.,
= *S. glaucescens* Stapf)

Robust, erect perennial, hydrophyte and rhizomatous (rhizome creeping and branched, culms usually spongy at base), 500–1500 mm tall. Leaf blades 100–350 mm long, 2–10 mm wide, leaf sheaths papery with prominent cross-veins. Spikelets 1.7–2.5 mm long. Panicle spike-like, 100–300 mm long, 4–7 mm wide, dense; spikelets laterally compressed; lower glume $\pm$ half the length of upper glume. *Flowering December to May*.

Wet soils in seasonal swamps, marshy places or flood-plains; often submerged. *Codd 3944.*

W S C N E

Sartidia De Winter (s. Afr.: 2 spp.) 9902622

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 286–287.

jucunda (*Schweick.*) *De Winter*

(= *Aristida jucunda* Schweick.)

Perennial, densely tufted and rhizomatous, up to 1 m high. Leaf blades up to 450 mm long, 3–4 mm wide, old leaves reddish brown. Spikelets 50–60 mm long (including awns); lateral awn ± same length as median awn; callus obtuse. *Flowering April to May*. Rocky hillsides, altitudes 1 300–2 000 m (Blaauberg area only). *Codd 8686.*

W S C N E

Schizachyrium Nees (s. Afr.: 6 spp.) 9900680

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 288–290.

brevifolium (Sw.) *Büse*

Delicate annual, up to 0,6 m high. Leaf blades up to 70 mm long, 2–5 mm wide, lower leaves with rounded blade tips. Spikelets (sessile) 2,5–3,0 mm long (pedicellate reduced to a glume). Inflorescence exserted from spathe. *Flowering February to April*. Shaded by taller grasses, often in damp places. *Scheepers 933.*

W S C N E

exile (*Hochst.*) *Pilg.*

(= *S. inclusum* Stent)

Annual, tufted, up to 1 m high. Leaf blades 20–150 mm long, 2–3 mm wide, leaf blades with tapering tips. Spikelets (sessile) 5–6 mm long (pedicellate much smaller). Inflorescence partly enveloped by spathe. *Flowering March to June*. Open places, often in poor dry soil. *Gertenbach 5597.*

W S C N E

jeffreysii (*Hack.*) *Stapf*

Perennial, loosely tufted, up to 1 m high. Leaf blades up to 200 mm long, 2–5 mm wide, glabrous. Spikelets (sessile) 7–8 mm long (dorsally compressed; pedicellate shorter). Inflorescence lacking barren branches; racemes with conspicuous white hairs; female-fertile lemma only shortly bifid. *Flowering February to June*. Open veld. *Smook 1450.*

W S C N E

sanguineum (*Retz.*) *Alst.*

(= *S. semiberbe* Nees)

Perennial, shortly creeping, rhizomatous and tufted, up to 1,2 m high, conspicuously red in autumn. Leaf blades 60–300 mm long, up to 7 mm wide,

blade tips rounded or abruptly pointed; ligule undivided, strongly curved. Spikelets (sessile) 6–9 mm long (laterally compressed; pedicellate somewhat shorter). Racemes nearly glabrous. *Flowering January to May*. Open veld. *Smook 4978.*

W S C N E

ursulus *Stapf*

Perennial, tufted (in dense round tufts), up to 0,7 m high. Leaf blades up to 400 mm long, 2–3 mm wide. Basal sheaths yellow, compressed, fan-like, blades hairy, folded, curved. Spikelets (sessile) 7–8 mm long (dorsally compressed; pedicellate shorter). Racemes with conspicuous yellowish hairs. *Flowering January to April*. Open sour veld. *De Winter 273.*

W S C N E

Schmidtia Steud. (s. Afr.: 2 spp.) 9903610

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 290–291.

kalihariensis *Stent*

Annual; tufted; up to 1 m high, coarse, hairy, viscid. Leaf blades 70–150 mm long, 8–10 mm wide, tapering abruptly at tip. Culm bases not swollen, cataphylls lacking. Spikelets 6–17 mm long. *Flowering through the year (but most commonly in mid- to late summer)*. Open veld, usually in poor sandy soil. *Koekemoer 210.*

W S C N E

pappophoroides *Steud.*

(= *S. bulbosa* Stapf)

Perennial, stoloniferous and tufted, up to 0,9 m high, hairy to nearly glabrous. Leaf blades 50–160 mm long, 2–7 mm wide, tapering gradually to a long fine point. Culm bases swollen, clad by hairy cataphylls. Spikelets 8–15 mm long. *Flowering July to June (but most commonly in summer)*. Open veld in a variety of soils and habitats. *Zambatis 161.*

W S C N E

Schoenefeldia Kunth (s. Afr.: 1 sp.) 9902950

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 291.

transiens (*Pilg.*) *Chiov.*

(= *Chloris transiens* Pilg.)

Perennial, densely tufted, up to 1,2 m high. Leaf blades up to 350 mm long, 5 mm wide. Spikelets 3,5–5,0 mm long, small in comparison to awns, awns of female-fertile and sterile lemmas 10–25 mm and 25–45 mm long respectively, curving gracefully around spike. *Flowering January to February*. Heavy soils and seasonally flooded flats. *Gertenbach 4931.*

W S C N E

Sehima Forssk. (s. Afr.: 2 spp.) 9900130

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 292–293.

galpinii Stent

Robust perennial, tufted, up to 1,8 m high. Leaf blades 3–6 mm wide. Spikelets (sessile) 12–15 mm long (pedicellate somewhat shorter); lower glume of sessile spikelets flattish, tip not toothed. *Flowering October to April*. Black turf soil. *Godfrey SH1793*.

W S C N E

ischaemoides Forssk.

Annual, up to 0,6 m high. Leaf blades 50–300 mm long, 1–3 mm wide. Spikelets (sessile) 9–15 mm long; lower glume of sessile spikelets deeply grooved below, tip deeply 2-toothed. *Flowering February to May*. Dry soils in savanna. *Van Rooyen 3368*.

W S C N E

Setaria P. Beauv. (s. Afr.: 18 spp.) 9901280

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 293–300.

homonyma (Steud.) Chiov.

Annual, loosely tufted (culms erect or geniculately ascending and rooting at nodes), up to 1 m high. Leaf blades 45–300 mm long, 5–35 mm wide, lanceolate, plicate at first. Culm nodes pubescent. Spikelets 2,3–2,8 mm long. Panicle open with stiff, spreading or suberect branches; bristles solitary; lower glume 3-nerved. *Flowering February to June*. Shady places in woodlands, forests, on riverbanks and floodplains on moist sandy soils, often in disturbed areas and cultivation. *Smook 1984*

W S C N E

incrassata (Hochst.) Hack.

(= *S. perberbis* De Wit,
= *S. woodii* Hack. complex)

Perennial, rhizomatous and tufted (with an oblique creeping rhizome), up to 2 m high. Leaf blades 150–600 mm long, 3–14 mm wide. Basal parts showing a reddish straw colour. Culm nodes hairy. Spikelets 2,5–3,0 (–3,7) mm long. Panicle spike-like, tapering towards tip, often interrupted in lower part; lower glume 3-nerved. *Flowering October to May*. Mostly on black clay in moist areas such as swamps and vleis, but also on streambanks, forest margins and rocky hillsides. *Godfrey SH1689*.

W S C N E

italica (L.) P. Beauv.*

Annual, culms erect, solitary to densely tufted, up to 1,5 m high. Leaf blades 150–450 mm long, 6–20 mm wide, leaves mainly cauline. Culm nodes glabrous. Spikelets 2,0–3,5 mm long. Panicle spike-like, 8–24 mm wide; spikelets disarticulating above glumes; lower glume 3-nerved; lower lemma smooth. *Flowering January to*

April. In gardens or cultivation and other disturbed areas. Native to Asia. *Van der Schijff sub PRE 33148*.

W S C N E

lindenbergiana (Nees) Stapf

(= *S. phillipsii* De Wit)

Perennial, rhizomatous (rhizomes short and creeping) or tufted (densely), up to 1,2 m high. Leaf blades 100–450 mm long, 1,5–7,0 (–10,0) mm wide, linear, finely plicate, flat or inrolled. Culm nodes glabrous. Spikelets 2,0–3,5 mm long. Panicle open or loosely contracted; bristles solitary; lower glume 3-nerved; lower lemma rugose. *Flowering October to May*. Usually in crevices on rocky or stony hillsides but also in open woodland and forests. *Smook 2664, Smook 2831*.

W S C N E

megaphylla (Steud.) T. Durand & Schinz

(= *S. chevalieri* Stapf ex Stapf & C.E. Hubb.,
= *S. insignis* De Wit)

Very tall, robust perennial, shortly rhizomatous and tufted (culms erect and occasionally rooting at nodes), up to 3 m high. Leaf blades 150–800 mm long, 10–110 mm wide, lanceolate, conspicuously plicate, leaf sheaths usually densely pubescent or at least with hairy margins. Culms 4–10 mm in diameter, nodes glabrous. Spikelets 2–3 mm long. Panicle open, 400–600 mm long; bristles solitary; lower glume 3-nerved. *Flowering September to May*. Riverine or forest grass on damp soils, mostly in shade, extending to forest margins and disturbed places such as roadcuttings. *Balsinhas 3147*.

W S C N E

nigrirostris (Nees) T. Durand & Schinz

Perennial, rhizomatous (rhizome very well developed and much-branched), or tufted (with few basal leaves), up to 1,2 m high. Leaf blades 100–550 mm long, 4–10 mm wide. Basal plant parts very robust and dark-coloured. Culm nodes hairy. Spikelets 3,5–5,0 mm long. Panicle spike-like, usually cylindrical to tip; spikelets with distinct dark tips; lower glume 3-nerved. *Flowering October to April*. Often on black turf in open grassland or on riverbanks. *Davidse & Ellis 5905*.

W S C N E

pallide-fusca (Schumach.) Stapf & C.E. Hubb.

Annual, loosely tufted, up to 0,9 m high. Leaf blades 45–170 mm long, 5–9 mm wide. Culm nodes glabrous. Spikelets 2,0–2,8 mm long. Panicle cylindrical, spike-like, normally 10 times longer than wide; spikelets subtended by 6–10 bristles; bristles often bright yellow but sometimes dark purple-brown; lower glume 3-nerved; lower lemma very finely rugose. *Flowering December to April*. In damp soils in disturbed weedy places and cultivation. *Smook 6295*.

W S C N E

plicatilis (Hochst.) Engl.

Loosely caespitose perennial, shortly rhizomatous and tufted, up to 1,5 m high. Leaf blades 100–350 mm long, 8–35 mm wide, narrowly lanceolate and coarsely pli-

cate. Culm nodes glabrous. Spikelets 2,5–3,3 mm long. Panicle open; bristles solitary; lower glume 3-nerved; lower lemma smooth or obscurely rugose. *Flowering October to March*. Coastal and inland forests in semishade, extending to forest margins and occasionally into woodlands. *Culverwell 643, Van Jaarsveld 177*.

W S C N E

pseudaristata (Peter) Pilg.

(= *S. tenuisetata* De Wit)

Perennial, shortly rhizomatous and tufted (culms erect but sometimes very slender), up to 1 m high. Leaf blades 100–300 mm long, 2–6 mm wide, flat, not plicate. Culm nodes glabrous. Spikelets 3,0–3,5 mm long. Panicle open, lax; bristles solitary, delicate; lower glume 3-nerved; lemma rugose. *Flowering February to March*. In shade of riverine forest. *Godfrey SH1804*.

W S C N E

rigida Stapf

Robust, erect perennial, rhizomatous (rhizome stout and oblique), up to 1,8 m high. Leaf blades 100–300 mm long, 3–6 mm wide (often inrolled). Spikelets 2,3–2,8 mm long. Panicle spike-like, up to 200 mm long; bristles often grooved and with sparse long hairs in lower part; lower glume 1-nerved. *Flowering February to March*. On streambanks and in swampy areas. *Smook 5539*.

W S C N E

sagittifolia (A. Rich.) Walp.

(= *Cymbosetaria sagittifolia* (A. Rich.) Schweick.)

Slender annual, loosely tufted, up to 0,8 m high. Leaf blades 50–300 mm long, (3–)5–11(–18) mm wide, leaf blades (at least lower ones) pseudopetiolate, bases sagittate with lobes 2–30 mm long. Culm nodes glabrous. Spikelets 2 mm long, 1–2 mm wide. Panicle open, racemes secund; bristles solitary; lower glume 3-nerved; lower lemma rugose. *Flowering January to March*. Shady places in savanna woodland or open glades in forests. *Smook 5397*.

W S C N E

sphacelata (Schumach.) Moss var. **sphacelata**

Fairly robust perennial, shortly or obliquely rhizomatous and tufted, up to 1 m high. Leaf blades 100–350 mm long, 2–5 mm wide. Culms 2–4 noded, 1–3 mm in diameter, nodes glabrous, sheaths and leaves glabrous, sparsely or densely hairy. Spikelets 1,5–3,5 mm long. Panicle spike-like, 30–150 mm long; bristles golden-yellow to reddish brown; lower glume 3-nerved; lemma rugose. *Flowering October to June*. Occupies a wide range of habitats ranging from streamsides and moist places to rocky hillsides, usually on well-drained soils. *Balsinhas 3468*.

W S C N E

sphacelata (Schumach.) Moss var. **sericea** (Stapf) Clayton

Perennial, shortly rhizomatous and tufted, up to 2 m high. Leaf blades 100–500 mm long, 3–10 mm wide. Culms 4–10-noded, 3–6 mm in diameter, nodes

glabrous, basal sheaths and leaves glabrous, densely or sparsely pubescent. Spikelets 1,5–3,5 mm long. Panicle spike-like, 70–250 mm long; bristles golden-yellow to reddish brown; lower glume 3-nerved; lower lemma rugose. *Flowering October to June*. Occupies a wide range of habitats ranging from riversides and swampy areas to rocky hillsides. *Zambatis 1835*.

W S C N E

sphacelata (Schumach.) Moss var. **torta** (Stapf) Clayton

Perennial, shortly rhizomatous and tufted (most leaves basal; culms occasionally flat and rooting at nodes), up to 500 mm tall. Leaf blades 100–300 mm long, 1–3 mm wide (mostly folded or inrolled). Basal sheaths usually strongly keeled and flabellate, old leaves curly, culm nodes glabrous. Panicle spike-like, 25–45 mm long; bristles 7–15 per spikelet cluster, usually dark purple-brown but occasionally yellowish; lower glume 3-nerved; lemma rugose. *Flowering September to March*. On rocky outcrops, hillsides, open woods and grassland on well-drained soils. *Stalmans 661*.

W S C N E

ustilata De Wit

Annual, loosely tufted (culms erect or geniculate), up to 0,65 m high. Leaf blades 50–170 mm long, 8–12 mm wide. Culm nodes glabrous. Spikelets 2,3–2,7 mm long. Panicle spike-like, usually ovate but up to 5 times longer than wide; bristles 6–10 per spikelet; lower glume 3-nerved; lemma very coarsely rugose. *Flowering January to May*. In drier bushveld regions in shade of trees and bushes. *Smook 2619, Hardy, Retief & Herman 5331*.

W S C N E

verticillata (L.) P. Beauv.

Annual, loosely tufted (often sprawling), up to 1 m high. Leaf blades 50–300 mm long, 6–22 mm wide. Spikelets 1,5–2,5 mm long. Panicle spike-like, often shortly branched and interrupted in lower part, 20–150 mm long; bristles retorsely barbed, often entangled; lower glume 1-nerved. *Flowering December to May*. Ruderal in disturbed areas, cultivation, cattle kraals and along paths, often in damp, shady places. *Smook 5318*.

W S C N E

Sorghastrum Nash (s. Afr.: 2 spp.) 9900461

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 300–301.

friesii (Pilg.) Pilg.

Perennial, tufted, up to 1,2 m high. Leaf blades up to 200 mm long, 2–6 mm wide, leaf blade base expanded, sheath mouth not appendaged. Spikelets 5–7(–8) mm long (all alike, each with an empty pedicel); awns 3–8(–10). *Flowering January to April*. Wet places. *De Winter 741*.

W S C N E

stipoides (Kunth) Nash(= *S. rigidifolium* (Stapf) Chippind.)

Perennial, tufted, up to 1,5 m high. Leaf blades up to 450 mm long, 2–5 mm wide, leaf blade base tightly rolled, sheath mouth with erect appendages. Spikelets 4–7 mm long (all alike, each with an empty pedicel); awns 8–16 mm long. *Flowering December to April*. Wet places. *Var der Schijff 1996*.

W S C N E

Sorghum Moench (s. Afr.: 3 spp.) 9900460

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 301–302.

bicolor (L.) Moench subsp. arundinaceum (Desv.) De Wet & Harlan(= *S. verticilliflorum* (Steud.) Stapf)

Short-lived perennial (without rhizomes) or annual, up to 2,5 m high. Leaf blades 20–30 mm wide. Spikelets (sessile) 5–7 mm long. Disturbed places. *Arnold 1567*.

W S C N E

bicolor (L.) Moench subsp. drummondii (Steud.) De Wet*(= *S. sudanense* (Piper) Stapf)

Annual, up to 3 m high. Leaf blades 8–15 mm wide. Spikelets (sessile) 6–7 mm long. Disturbed places. Native to tropical North Africa. *Nat. Herb. Pretoria B*.

W S C N E

halepense (L.) Pers.*(= *S. alnum* Parodi)

Perennial, usually strongly long-rhizomatous, up to 2,5 m high. Leaf blades 10–30 mm wide. Spikelets (sessile) 4,0–5,5(–7,0) mm long (pedicellate spikelet longer). *Flowering usually December to May (occasionally at other times)*. In disturbed places. Native of Mediterranean region. *Smook 4381*.

W S C N E

versicolor Andersson

Perennial or annual, up to 1,2 m high. Leaf blades 4–8 mm wide. Nodes with spreading white hairs. Spikelets (sessile) 4–7 mm long, black at maturity. *Flowering December to May*. Black turf soil. *Van Rooyen 3270*.

W S C N E

Sporobolus R. Br. (s. Afr.: 38 spp.) 9902830

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 304–313.

Veldkamp. 1990. Kew Bull. 45,3: 581.

acinifolius Stapf

Mat-forming perennial, rhizomatous (rhizome long and much-branched), up to 430 mm tall. Leaf blades 40–120 mm long, up to 3 mm wide, cauline leaves usually much longer than basal leaves, leaf tips tapering

to a fine point. Spikelets 1–2 mm long. Panicle dichotomously branched, axils without hairs; spikelets solitary on branchlet tips. *Flowering February to May*. Brackish calcareous soil in pans or at edge of water. *Zwanziger 772*.

W S C N E

africanus (Poir.) Robyns & Tournay(= *S. capensis* (Willd.) Kunth)

Perennial, rhizomatous and tufted, up to 1,5 m high. Leaf blades 200–400 mm long, 1–4 mm wide. Spikelets 2,0–2,8 mm long. Panicle dense, not whorled, almost spike-like, branches relatively short and rigid, central axis usually visible; lower glume a quarter to half the spikelet length; upper glume half the spikelet length; grain ellipsoid, 1,1–1,2 mm long. *Flowering October to April*. Mainly in disturbed places and along streams. *Hanekom 1671*.

W S C N E

albicans Nees

Mat-forming perennial, rhizomatous, up to 360 mm tall. Leaf blades 5–12 mm long, 1 mm wide. Spikelets 2,0–2,5 mm long. Inflorescence 25–30 mm wide, spike-like but spikelets not densely clustered to hide central axis; glumes and lemmas membranous, pale yellow. *Flowering February to April*. Limestone pans or dried up depressions. *Smook 6270*.

W S C N E

centrifugus (Trin.) Nees(= *S. schlechteri* Schweick.)

Perennial, rhizomatous (rhizome can be long and creeping), up to 0,9 m high. Leaf blades 60–300 mm long, filiform, 1,0–1,5 mm wide. Basal sheaths hard, brittle, glossy, yellow or brown. Spikelets 2,5–4,2 mm long. Panicle contracted and unobtrusively whorled; spikelets in lowest whorl often sterile and disarticulating at maturity; lower glume slightly shorter than spikelet; upper glume longer than spikelet. *Flowering October to April*. High mountainveld or highveld on humiferous well-drained soils. *Wedermann & Oberdieck 2188, Mohle 243*.

W S C N E

congoensis Franch.(= *S. eylesii* Stent & Rattray)

Perennial, rhizomatous, up to 0,92 m high. Leaf blades 60–220 mm long, 3–10 mm wide, ciliate on margins. Spikelets 3,0–4,5 mm long. Panicle 100–200 mm long, whorled, with fewer than 10 whorls; spikelets loosely clustered on upper two-thirds of branches; lower glume 1,7–4,0 mm long, half to three-quarters the spikelet length; upper glume longer than spikelet. *Flowering November to January*. Shallow rocky soil on sandstone and quartzite. *Matthews 700*.

W S C N E

conrathii Chiov.

Perennial, tufted, up to 480 mm tall. Plant base fibrous. Leaf blades 100–180 mm long, 1,0–1,5 mm wide.

Spikelets 1.5–1.9 mm long. Panicle dichotomously branched with stiff long hairs in axils; glumes $\pm$ equal, a third to half the spikelet length. *Flowering December to March*. Shallow soil on rocky slopes or outcrops. *Du Toit 80*.

W S C N E

consimilis Fresen.

(= *S. robustus* sensu Chippind., non Kunth)

Robust and reed-like perennial, rhizomatous, up to 1.6 m high. Leaf blades 300–600 mm long, 6–10 mm wide. Spikelets 1.7–2.5 mm long. Panicle not whorled, linear, more than 5 times longer than wide; lower and upper glumes $\pm$ as long as spikelet; glumes keeled, keels scabrid. *Flowering November to May*. On sand or turf soils in riverbeds, on sand banks and near brackish springs. *Codd 644*.

W S C N E

discolorus Nees

Perennial or annual, shortly rhizomatous or tufted, up to 180 mm tall. Leaf blades 10–30 mm long, 2–5 mm wide, short and broad, in a basal rosette, margins pectinately ciliate. Spikelets 1.0–1.7 mm long. Panicle whorled; spikelets pendulous at maturity; grains discoid. *Flowering November to May*. Sandy depressions on cave sandstone or on exposed bedrock; often on clayey soil in bare patches or wet areas. *Kinges 1390*.

W S C N E

festivus A. Rich.

(= *S. festivus* A. Rich. var. *fibrosus* Stent)

Perennial, tufted, up to 0.55 m high. Leaf blades 20–70 mm long, 1–2 mm wide, old leaf sheaths splitting into fibres, lacking woolly hairs between them. Spikelets 0.8–1.5 mm long. Panicle dichotomously branched without hairs in axils. *Flowering December to May*. On exposed bedrock in sandfilled depressions, also in vleis, on pans edges and in mopani woodland. *Smook 2656*.

W S C N E

fimbriatus (Trin.) Nees

(= *S. fimbriatus* (Trin.) Nees var. *latifolius* Stent)

Perennial, densely tufted and rhizomatous (rhizome characteristically oblique), up to 1.6 m high. Leaf blades up to 300 mm long, 2–4 mm wide. Spikelets 1.4–2.2 mm long. Panicle fairly dense, open, branches numerous, not whorled and not spreading more than 60°; lower glume a quarter to three-quarters the spikelet length; upper glume $\pm$ two-thirds the spikelet length. *Flowering December to May*. Sandy well-drained loam near water, often in disturbed areas or in shady spots. *Smook & Gibbs Russell 1952*.

W S C N E

ioclados (Trin.) Nees

(= *S. marginatus* Hochst. ex A. Rich.,
= *S. smutsii* Stent)

Perennial (often mat-forming), rhizomatous and stoloniferous up to 1 m high. Leaf blades 20–300 mm long, 2–12 mm wide, flat, basal leaf sheaths papery. Culms

geniculate. Spikelets 1.5–2.5 mm long. Panicle whorled; lower glume a quarter to a third the spikelet length; upper glume as long as, or longer than spikelet. *Flowering January to April*. A variety of soil types, including black turf and sand, often in disturbed places. *De Winter & Codd 340*.

W S C N E

ludwigii Hochst.

Mat-forming perennial, rhizomatous (rhizome long, creeping and profusely branched), up to 450 mm tall. Leaf blades 10–30 mm long, 2–3 mm wide, margins not ciliate. Spikelets 1.5–2.0 mm long. Panicle whorled; lower glume a third the spikelet length; upper glume as long as spikelet. *Flowering January to May*. Fine, damp calcareous soils in vleis or near pans. *Burt Davy 12950*.

W S C N E

molleri Hack.

Annual, loosely tufted, up to 360 mm tall. Leaf blades 20–250 mm long, 1–5 mm wide. Spikelets 1.7–2.0 mm long. Panicle linear, more than 5 times longer than wide, not whorled; lemma narrow and needle-like, notably longer (to 1.5 times) than rest of spikelet. *Flowering February to April*. Well-drained soil on abandoned or cultivated lands. *Retief 33*.

W S C N E

natalensis (Steud.) T. Durand & Schinz

Perennial, tufted, up to 1.4 m high. Leaf blades 250–500 mm long, 2–4 mm wide. Spikelets 1.6–2.3 mm long. Panicle fairly dense, branches numerous, not whorled, contracted or sometimes spreading; lower glume a third to half the spikelet length; upper glume half to two-thirds the spikelet length. *Flowering December to April*. Sandy well-drained soil near water or in woodlands, often in disturbed places. *Van der Schijff 4334*.

W S C N E

nitens Stent

Perennial, rhizomatous and stoloniferous, up to 0.52 m high. Leaf blades 35–90 mm long, 4–8 mm wide, margins wavy and scabrid or ciliate. Spikelets 1.2–1.5 mm long. Panicle with lowest branches whorled; spikelets clustered on upper half of primary branches; lower glume half the spikelet length; upper glume as long as spikelet, acuminate, prominently keeled, keel scabrid. *Flowering November to April*. In bare patches and in overgrazed veld, also in gardens and other disturbed places. *De Winter & Codd 510*.

W S C N E

panicoides A. Rich.

Annual, loosely tufted (erect and slender), up to 0.96 m high. Leaf blades 50–300 mm long, 2–6 mm wide. Spikelets 2.0–3.3 mm long. Inflorescence branches whorled; spikelets large, sparse, sterile in lowest whorl; grains almost spherical, bright brown or orange, 1.2–1.9 mm in diameter. *Flowering December to May*.

Sandy, rocky areas on steep slopes or flats, most often on roadsides or in other disturbed areas, sometimes in shade. *Fourie 2541*.

W S C N E

pectinatus Hack.

Perennial, rhizomatous (older plants with long horizontally creeping rhizomes), up to 0,74 m high. Leaf blades 50–300 mm long, 5–8 mm wide, pectinately ciliate. Spikelets 3,0–3,7 mm long. Panicle whorled; spikelets very densely clustered on upper third of branches, leaving lower part bare; lower glume half the spikelet length; upper glume as long as spikelet. *Flowering November to February*. Shallow rocky soil on outcrops or quartzite ridges. *Retief & Herman 95*.

W S C N E

pyramidalis P. Beauv.

Perennial, densely tufted and rhizomatous, up to 1,6 m high. Leaf blades 100–500 mm long, 3–10 mm wide. Spikelets 1,7–2,0 mm long. Panicle linear, more than 5 times longer than wide; both glumes shorter than a third the spikelet length. *Flowering November to May*. Vleis, watercourses, periodically flooded areas or near dams on sandy soil or heavy clay. *Smook 4182*.

W S C N E

rangei Pilg.

Perennial (usually robust), rhizomatous (rhizome usually horizontal) or stoloniferous (seldom), up to 460 mm tall. Leaf blades 30–140 mm long, setaceous or up to 3 mm wide, basal leaf sheaths hard, glossy and brittle. Culms erect. Spikelets 1,7–2,7 mm long. Panicle with lowest branches whorled; lower glume less than half the spikelet length; upper glume as long as spikelet. *Flowering November to March*. Calcareous sandy soil in shallow pans or near watercourses. *Zambatis 12*.

W S C N E

salsus Mez

Perennial, rhizomatous, up to 0,7 m high. Leaf blades 45–150 mm long, 1–4 mm wide. Spikelets 2,0–2,9 mm long. Panicle dichotomously branched, without long hairs in axils; spikelets large and solitary at branchlet tips. *Flowering January to September*. Seasonally flooded brackish pans and near hot springs or rivers. *De Winter & Codd 339*.

W S C N E

sanguineus Rendle

(= *S. rhodesiensis* Stent & Rattray)

Perennial, loosely tufted and rhizomatous, up to 1 m high. Leaf blades 100–400 mm long, 1,5–6,0 mm wide, margins ciliate. Spikelets 2,0–3,5 mm long. Panicle 200–430 mm long, linear to lanceolate, whorled, with more than 10 whorls; lower glume less than half the spikelet length; upper glume longer than spikelet. *Flowering November to April*. Stony hillsides and highly hilly grasslands. *Van der Schijff 4060*.

W S C N E

spicatus (Vahl) Kunth

Mat-forming, wiry perennial, rhizomatous and stoloniferous. up to 1 m high. Leaf blades rigid and spiny-tipped, 20–300 mm long, 1–4 mm wide. Spikelets 1,4–2,8 mm long. Panicle spike-like, not whorled, narrower than 5 mm; spikelets very densely clustered around central axis and hiding it completely. *Flowering December to June*. Grassy vleis, brackish sandy soil to very saline soils on pans or in riverbeds. *Codd & Dyer 3804*.

W S C N E

stapfianus Gand.

Perennial, tufted, up to 0,55 m high. Leaf blades 30–150 mm long, 1–2 mm wide, old leaf sheaths fibrous with a mass of woolly hairs between fibres. Spikelets 1,4–2,1 mm long. Panicle dichotomously branched, without long hairs in axils. *Flowering October to March*. Sandy well-drained to very compacted soils on rocky outcrops or near streams. *Scheepers 779*.

W S C N E

subtilis Kunth

Perennial, rhizomatous (rhizome slender and creeping) or stoloniferous (sometimes) or tufted, up to 0,6 m high. Leaf blades 40–150 mm long. Culms wiry; basal leaves few. Spikelets 1,5–3,0 mm long. Panicle dichotomously branched with long stiff hairs in axils; rachilla extending into a rudimentary floret between upper glume and palea. *Flowering November to January*. Shallow sandy soil in moist areas. *Huntley 700*.

W S C N E

subulatus Hack.

(= *S. artus* Stent,

= *S. mauritanus* auct. non (Steud.) T. Durand & Schinz)

Perennial, densely tufted and rhizomatous. up to 430 mm tall. Leaf blades 50–250 mm long, 1–6 mm wide (often filiform). Basal sheaths papery, not glossy. Spikelets 2,5–5,0 mm long. Panicle with lowest branches whorled, primary branches short and contracted; lower glume two-thirds to three-quarters the spikelet length; upper glume longer than spikelet. *Flowering October to January*. Poorly drained soil in marshy areas or on coastal sandflats, fairly frequent in sourveld. *Schrire 613*.

W S C N E

virginicus (L.) Kunth

Mat-forming perennial, stoloniferous or rhizomatous (rhizomes extensively creeping), up to 0,77 m high. Leaf blades 50–150 mm long, 1–7 mm wide, convolute and pungent. Spikelets 1,7–2,5 mm long. Panicle spike-like, branches not whorled; lower glume three-quarters the spikelet length; upper glume as long or slightly longer than spikelet. *Flowering October to April*. On dunes, beaches and along tidal streams on sand. Mostly along coast but also inland at saline water edges. *Brynard & Pienaar 4493*.

W S C N E

welwitschii Rendle

(= *S. macrothrix* Pilg.,
= *S. baumianus* Pilg.)

Perennial, rhizomatous and tufted, up to 0,7 m high, wiry. Leaves few, mostly cauline, leaf blades 40–80 mm long, mostly filiform, but up to 2 mm wide. Spikelets 0,8–2,1 mm long. Panicle dichotomously branched with a few long stiff hairs in some of the axils; spikelets solitary on tips of delicate branches; glumes unequal, lower glume half, upper glume two-thirds the spikelet length. Flowering December to February. Brackish sandy loam on edge of pans or woodlands. Rogers 25106.

W S C N E

Stereochlaena Hack. (s. Afr.: 1 sp.) 9900910

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 315.

cameronii (Stapf) Pilg.

Perennial, sometimes stoloniferous and tufted, up to 1 m high. Leaf blades 80–250 mm long, 2–8 mm wide. Basal sheaths hairy. Spikelets 2,0–3,5 mm long; lower lemma with a straight awn 5–20 mm long; female-ferile floret dark brown at maturity. Flowering January to May. Dry sandy grassland. Galpin 11345.

W S C N E

Stiburus Stapf (s. Afr.: 2 spp.) 9904000

Keekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 315–316.

alopescuroides (Hack.) Stapf

Perennial, rhizomatous and tufted, up to 0,63 m high. Leaf blades 90–360 mm long, 2 mm wide. Spikelets 2,7–4,0 mm long. Inflorescences rarely overtopping leaves; glumes and lemmas very densely hairy, dark purple to black, tips acuminate. Flowering February to May. Open veld, mostly sourveld, at fairly high altitudes, in fertile soil and wet areas. Mohle 351, Strey 3022.

W S C N E

conrathii Hack.

Perennial, rhizomatous and tufted, up to 410 mm tall. Leaf blades 30–100 mm long. Spikelets 1,7–3,0 mm long. Inflorescences usually overtopping leaves; glumes and lemmas hairy, light purple to yellow, tips acute. Flowering August to December. Damp or wet areas in mountain sourveld. Drews 28.

W S C N E

Stipa L. (s. Afr.: 7 spp.) 9902630

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 316–318.

dregeana Steud. var. elongata (Nees) Stapf

Perennial, tufted and rhizomatous (rhizomes short, knotted), up to 1,2 m high. Leaf blades up to 60 mm long, up to 12 mm wide. Spikelets 5–7 mm long (excluding straight or bent and twisted awn to 18 mm long); glumes equal, longer than lemmas. Panicle open, branches slender, up to 200 mm long, spreading, drooping, with spikelets in upper half only. Flowering August to May (most commonly in summer). Moist places in forests. Behr 915.

W S C N E

Stipagrostis Nees (s. Afr.: 27 spp.) 9902611

Smook. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 318–329.

hirtigluma (Trin. & Rupr.) De Winter subsp. patula

(Hack.) De Winter
(= *Aristida gracilior* Pilg. var. *gracilior*)

Perennial, densely tufted (erect), up to 0,6 m high. Leaves mostly in dense basal tufts, leaf blades up to 200 mm long, setaceous. Culms conspicuously striate, smooth. Spikelets 12–13 mm long (excluding awns). Inflorescence open, spreading, not much longer than wide; glumes brown, usually flushed with purple, densely hairy; lemmas densely tuberculate, articulation between apex of lemma and base of column; column well developed, stout; only central awn plumose, long spreading hairs covering entire awn and extending for varying lengths down column; callus 0,7 mm long, with a distinct glabrous break between short hairs on callus body and long hairs at junction of lemma and callus, with a pungent, naked tip. Flowering February to July. Calcareous soils or sandy areas near limestone around pans, on floodplains or rocky ridges. Codd 310.

W S C N E

obtusa (Delile) Nees

Compact and densely tufted; up to 0,6 m high. Leaves markedly basal, often curved, glabrous or with scattered, long, bulbous-based hairs, leaf blades 10–250 mm long, up to 1 mm wide. Basal sheaths glabrous or hairy, but not with densely matted woolly hairs. Spikelets 11–12 mm long (excluding awns). Inflorescence usually contracted, interrupted, much-branched, branches bearing spikelets to near base; glumes pallid, firm, with membranous apices and margins, glabrous, scabrid; lemma articulation between apex of lemma and base of column, column length variable, scabrid to and at branching point of awns; only central awn plumose; callus 1,5 mm long, with a naked tip varying from pungent to minutely bifid. Flowering July to May. Mainly sandy soils in dry areas. Roberts 564.

W S C N E

uniplumis (Licht.) De Winter var. uniplumis

(= *Aristida uniplumis* Licht. var. *pearsonii* Henrard,
= *Aristida uniplumis* Licht. var. *uniplumis*)

Perennial (to subperennial), densely to laxly tufted (erect to geniculate), up to 0,9 m high. Leaves mainly basal, leaf blades up to 200 mm long, setaceous, up to 2 mm wide. Culms simple or branched well above base. Spikelets

8–10 mm long (excluding awns). Inflorescence narrow or effuse with many spikelets; glumes usually shorter than 10 mm, glabrous; lemma tuberculate around point of articulation, articulation between apex of lemma and base of column; column well developed, plumed in upper half, with hairs longer than 1.5 mm; only central awn plumose with hairs occurring up to a third above or down to branching point of awns, apex without hairs; callus 0.5–1.2 mm long, with short hairs along entire length and long hairs at junction of lemma and callus, with pungent, naked tip. *Flowering December to May*. Usually on sandy soils and disturbed areas and floodplains. *Smook 5394*.

W S C N E

uniplumis (Licht.) De Winter var. **neesii** (Trin. & Rupr.) De Winter

(= *Aristida uniplumis* Licht. var. *neesii* Trin. & Rupr.)

Perennial, laxly tufted (erect) or rhizomatous (rhizomes short and branched), up to 0.9 m high. Leaves mainly basal, leaf blades up to 160 mm long, setaceous. Spikelets 10.0–14.5 mm long (excluding awns). Inflorescence narrow; spikelets few; glumes 10 mm or longer, glabrous; lemma tuberculate just below articulation point, articulation between apex of lemma and base of column; column well developed and plumed in upper half of its length, with hairs longer than 1.5 mm; only central awn plumose, usually hairy to branching point but not apex, diverging at right angles from column; callus 1.0–1.5 mm long, with short hairs along entire length and long hairs at junction of lemma and callus, with a pungent, naked tip. *Flowering December to May*. Mainly gravel soils, sometimes sandy soils on dolomite or over surface limestone, and rocky slopes. *Smook 4135, Scheepers 1516*.

W S C N E

zeyheri (Nees) De Winter subsp. **sericans** (Hack.) De Winter
(= *Aristida capensis* Thunb. var. *dieterleniana* Schweick.,
= *Aristida sericans* Hack. apud Schinz)

Robust perennial, densely tufted (erect), up to 0.75 m high. Leaf blades up to 300 mm long, setaceous, rolled. Culms 1.2–5.0 mm wide. Spikelets to 14 mm long (excluding awns). Inflorescence extending well above leaves, usually narrow, never effuse, with few spikelets; glumes pallid, long hairy; lemma articulation at apex of lemma or absent; column stout, with long hairs for some distance below branching point; all 3 awns plumose to branching point of awns, excurrent into a naked apex; callus 1.0–1.5 mm long, naked, with a pungent tip. *Flowering January to May*. Sandy soils on rocky outcrops and disturbed areas such as old lands. *Coetzee 726*.

W S C N E

Styppeiochloa De Winter (s. Afr.: 1 sp.) 9903504
Barker. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 330.

gynoglossa (Gooss.) De Winter
(= *Crinipes gynoglossa* Gooss.)

Perennial, mat-forming to tufted, up to 0.7 m high. Leaf blades 100–400 mm long, up to 1.2 mm wide.

Sheaths and leaves splitting with age, forming a dense, fibrous base. Spikelets 5–7 mm long, 2–5-flowered, uppermost floret sterile or reduced; glumes 1–3-nerved, unequal, 3 central nerves produced into a short awn; lemmas basally pubescent with 3-lobed apex, 3–5(–7)-nerved, with middle lobe extending into a short awn. *Flowering September to January (and even later to the north)*. Rock crevices and seepage areas over rocks; high rainfall areas (800 mm or more) at high altitudes. *Codd 8219*.

W S C N E

Tarigidia Stent (s. Afr.: 1 sp.) 9900891

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 331.

aequiglumis (Gooss.) Stent

Perennial, densely tufted, up to 1.5 m high. Leaf blades up to 350 mm long, 3–5 mm wide. Spikelets 4.0–4.5 mm long. Inflorescence spike-like or narrowly conical, with short branches appressed or somewhat spreading below; spikelets woolly; glumes equal, $\pm$ two-thirds of spikelet length. *Flowering January to May*. Open veld or among rocks. *Sekhaolelo 165*.

W S C N E

Tetrapogon Desf. (s. Afr.: 1 sp.) 9903220

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 332.

tenellus (Roxb.) Chiov.

Short-lived perennial or annual, loosely tufted (culms erect or ascending), up to 0.75 m high. Leaf blades 100–240 mm long, 2–4 mm wide. Spikelets 3.5–5.0 mm long. Spikes solitary (seldom paired); spikelets 5- or 6-flowered; glumes persistent, 3–5 mm long; lemma coriaceous, 4.0–6.5 mm long, keeled; awns 3–11 mm long. *Flowering January to April*. Usually in shade in open or dense bushveld, often in disturbed rocky soil and on limestone. *Van der Schijff 5204*.

W S C N E

Themeda Forssk. (s. Afr.: 1 sp.) 9900830

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 334–335.

triandra Forssk.

(= *T. triandra* Forssk. var. *burchellii* (Hack.) Stapf,
= *T. triandra* Forssk. var. *hispidia* (Nees) Stapf,
= *T. triandra* Forssk. var. *imberbis* (Retz.) A. Camus,
= *T. triandra* Forssk. var. *trachyspatha* Gooss.,
= *T. triandra* Forssk. var. *vulgaris* auct., non Hack.)

Perennial, rhizomatous, up to 1.5 m high. Leaf blades up to 300 mm long, 1–8 mm wide, leaf sheaths compressed, blade tips abruptly or gradually tapering; ligule a notched membrane. Spikelets (sessile) 5–7 mm

long (pedicellate equalling it or somewhat longer), awned, in drooping triangular clusters with reddish spathes and bract-like sterile spikelets. *Flowering September to June*. Undisturbed veld. *Venter 10,629*.

W S C N E

Trachypogon Nees (s. Afr.: 1 sp.) 9900780

Gibbs Russell & Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 336–337.

spicatus (L.f.) Kuntze
(= *T. capensis* (Thunb.) Trin.)

Perennial, rhizomatous, tufted, up to 1,2 m high. Leaf blades 50–200 mm long, up to 5 mm wide; ligule membranous, splitting into 3 lobes. Culm nodes with ring of hairs. Spikelets (short-pedicellate) 6–8 mm long (long-pedicellate slightly longer). Inflorescence a single raceme (rarely up to 5 racemes) with velvety awns throughout its length. *Flowering October to May*. Bushveld and sourveld. *Smook 2620*.

W S C N E

Tragus Haller (s. Afr.: 4 spp.) 9902740

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 337–339.

berteronianus Schult.

Annual, loosely tufted, up to 0,6 m high. Leaf blades 10–60 mm long, 2–5 mm wide. Spikelets (lowest in each cluster) 2,0–3,8 mm long. Inflorescence narrowly spike-like; spikelets clustered on peduncles that are much shorter than spikelets; lowest glumes 5-nerved, spaces between nerves 2–5 times wider than nerves (in middle, tapering sharply at their ends); glume hairs hooked at tips; anthers 0,4–0,6 mm long. *Flowering January to December (most commonly in summer)*. Disturbed places. *Pott 5533*.

W S C N E

koelerioides Asch.

Perennial, rhizomatous and stoloniferous, up to 0,65 m high. Leaf blades 10–50(–80) mm long, up to 3 mm wide. Spikelets (lowest in each cluster) 3,5–4,8 mm long. Inflorescence narrowly spike-like; spikelets clustered on peduncles that are much shorter than spikelets; glume hairs curved, not hooked at tip; anthers 1,8–2,5 mm long. *Flowering October to May*. Open veld, on a variety of soil types. *Burt Davy 12980*.

W S C N E

racemosus (L.) All.

Annual, culms usually decumbent, up to 400 mm tall. Leaf blades 20–60 mm long, 2–4 mm wide. Spikelets (lowest in each cluster) 3,5–5,0 mm long. Inflorescence loosely spike-like; spikelets clustered on peduncles that are much shorter than spikelets; lowest glume 7-nerved, spaces between nerves $\pm$ same width as nerves;

glume hairs hooked at tips; anthers 0,6–0,8 mm long. *Flowering November to May*. Limestone and sandy soils, often in moist places and disturbed areas. *Smook 2774*.

W S C N E

Tricholaena Schrad. ex Schult. (s. Afr.:

2 spp.) 9901330

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 341–342.

monachne (Trin.) Stapf & C.E. Hubb.

Perennial or annual, up to 1 m high. Leaf blades 30–70 mm long, 2,0–3,5 mm wide, leaves sometimes hairy. Culm glabrous. Spikelets 2–3 mm long, 1 mm wide, usually glabrous or very rarely hairy. *Flowering November to March*. Favouring sandy soil, also occurring as a ruderal. *Zambatis 564*.

W S C N E

Trichoneura Anders. (s. Afr.: 2 spp.) 9903530

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 342–344.

grandiglumis (Nees) Ekman

Perennial, tufted (culms slender; erect or ascending), up to 0,63 m high. Leaf blades 30–200 mm long, 3–7 mm wide. Spikelets 5–14 mm long. Inflorescence branches spreading horizontally; spikelets 4–9-flowered; glumes 5,0–13,5 mm long. *Flowering November to April*. On sandy soils on hillsides or open floodplains and in bushveld, sometimes in disturbed areas. *Smook 4896*.

W S C N E

Trichopteryx Nees (s. Afr.: 1 sp.) 9901750

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 344.

dregeana Nees

Perennial, tufted, up to 0,9 m high, growing in a tangled mass. Leaves spreading and reflexed, leaf blades up to 500 mm long (light green); 4 mm wide. Spikelets 4–7 mm long. Panicle open, up to 140 mm long; spikelets with a whorl of hairs at base; glumes and lower lemma bright brown and tips transparent; female-fertile lemma with 2 conspicuous tufts of white hairs, side awns 2–3 mm long, central awns slender, 4–7 mm long. *Flowering December to May*. Vleis and wet places, shady crevices among rocks on hillsides. *Kluge 1694*.

W S C N E

Tripogon Roem. & Schult. (s. Afr.: 1 sp.) 9903180

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 345.

minimus (*A. Rich.*) Steud.

(= *T. abyssinicus* sensu Chippind., non Nees)

Perennial, tufted, up to 220 mm tall. Leaf blades 10–90 mm long, filiform, up to 0,5 mm wide, old leaf sheaths dividing into coarse fibres. Spikelets 2,6–8,0 mm long. Spikes 20–80 mm long, slender, erect; spikelets 5–10-flowered; lemma tip emarginate and mucronate. *Flowering December to May*. Mostly in shallow soil on rocky outcrops but also in waterlogged sand and seasonal pans. *Smook 1009*.

W	S	C	N	E
---	---	---	---	---

Triraphis *R. Br.* (s. Afr.: 5 spp.) 9903500

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 345–347.

andropogonoides (Steud.) *E. Phillips*

Perennial, rhizomatous (long creeping rhizome), up to 1,22 m high. Plant base dark brown to reddish; rootstock very well developed; tillers very loosely grouped. Leaf blades 200–400 mm long, 2–6 mm wide. Spikelets 6–10(–15) mm long. Panicle dense, 120–300 mm long; spikelets 5–15-flowered, central awn shorter than lemma; anthers 1,2–2,3 mm long. *Flowering October to May*. Well-drained soil on rocky slopes or in deep sand in open grassland. *Van der Schijff 5321*.

W	S	C	N	E
---	---	---	---	---

purpurea Hack.

(= *T. fleckii* Hack.)

Annual; tufted, 0,09–0,77 m high. Leaf blades 35–60 mm long, 1–2 mm wide. Spikelets 6–10 mm long. Panicle longer than 30 mm, open or dense; spikelets 5–11(–24)-flowered; anthers 1,2–2,0 mm long. *Flowering January to June*. Often in moist patches in shade on red sand or rocky calcareous soils. *Koekemoer 211*.

W	S	C	N	E
---	---	---	---	---

schinzii Hack.

(= *T. schlechteri* Pilg. ex Stent)

Perennial, short-rhizomatous and tufted, up to 1,4 m high. Plant base dark brown to reddish. Leaf blades 250–500 mm long, 2–5 mm wide. Spikelets 6–11 mm long. Panicle open, 200–400 mm long; central awn longer than lemma. *Flowering November to April*. Sandy grassland or bushveld, deep sand on dunes or riverbanks and on forest margins. *Smook 2649*.

W	S	C	N	E
---	---	---	---	---

Tristachya *Nees* (s. Afr.: 6 spp.) 9901740

Anderson. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 347–348.

biseriata Stapf

Perennial, tufted, up to 0,9 m high. Leaf blades 300–400 mm long, up to 2 mm wide, filiform. Spikelets 20–25 mm long; pedicels connate; glumes with tuber-

cle-based hairs along margins; female-fertile lemma side awns (10–)12(–14) mm long, central awns 30–50 mm long. *Flowering October to March*. Shallow stony soils on hillsides and rocky outcrops. *Smook 4853*.

W	S	C	N	E
---	---	---	---	---

leucothrix Nees

(= *Apochaete hispida* (L.f.) J.B. Phipps, = *T. hispida* (L.f.) K. Schum.)

Perennial, tufted, up to 0,9 m high. Leaf blades 50–400 mm long, 2–6 mm wide, basal leaf sheaths covered with dense brown hairs at base. Spikelets 24–45 mm long; pedicels connate; glumes and lower lemma with many tubercle-based hairs; female-fertile lemma side awns 3–5 mm long, central awns 50–100 mm long. *Flowering October to March*. Marshy grassland, mountain sourveld and on hillsides. *Ellis 1834*.

W	S	C	N	E
---	---	---	---	---

rehmannii Hack.

(= *Dolichochoaete rehmannii* (Hack.) J.B. Phipps)

Perennial, tufted, up to 0,9 m high. Leaf blades up to 200 mm long, 1–3 mm wide, curling when old. Spikelets 20–30 mm long; pedicels connate; glumes and lower lemma glabrous or with occasional tubercle-based hairs; female-fertile lemma side awns (18–)22(–24) mm long, central awns 50–100 mm long. *Flowering November to March*. Shallow stony soils. *Liebenberg 8574*.

W	S	C	N	E
---	---	---	---	---

Urelytrum Hack. (s. Afr.: 1 sp.) 9900170

Gibbs Russell. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 349.

agropyroides (Hack.) Hack.

(= *U. squarrosus* Hack.)

Coarse perennial, tufted, up to 1,6 m high. Leaf blades up to 400 mm long, 1–6 mm wide (rolled when young and later when old). Spikelets (sessile) 7–8 mm long (pedicellate smaller except for awn). Inflorescence usually a solitary raceme. Lower glume of pedicellate spikelets with a long, rough recurved awn. *Flowering October to June*. Open grassland and stony hillsides. *Smook 4115*.

W	S	C	N	E
---	---	---	---	---

Urochloa *P. Beauv.* (s. Afr.: 6 spp.) 9901100

Koekemoer. 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 350–352.

brachyura (Hack.) Stapf

Annual, coarsely tufted (culms erect or geniculately ascending), up to 1,2 m high. Leaf blades 30–300 mm long, 3–16 mm wide. Spikelets 3,5–6,0 mm long. Racemes (2–)5–6(–10), 10–60 mm long; spikelets narrowly ovate; lower glume two-thirds the spikelet length, 5-nerved, tip narrowly rounded and without

stiff hairs on back; upper lemma shortly mucronate, mucro $\pm$ 1 mm long. *Flowering October to April*. Usually on black turf and clayey soils in woodlands or grassland, often in shade. *Smook 4216*.

W S C N E

mosambicensis (Hack.) Dandy

(= *U. pullulans* Stapf,
= *U. rhodesiensis* Stent)

Perennial, stoloniferous and tufted (sometimes rooting and branching from lower nodes), up to 1,5 m high. Leaf blades 20–300 mm long, 3–20 mm wide. Basal sheaths glabrous or hairy, usually not splitting into fibres. Spikelets 3–5 mm long. Racemes (2–)3–15, 20–80 mm long; lower glume 3-nerved with 1–3 stiff hairs on back; awn of upper lemma well developed, 0,5–1,2 mm long. *Flowering October to May*. On a variety of soil types, usually in sheltered disturbed places. *Smook 5389*.

W S C N E

oligotricha (Figert & De Not.) Henrard

(= *U. bolbodes* (Steud.) Stapf)

Perennial, rhizomatous (rhizomes stout, sometimes shortly creeping), up to 1 m high. Leaf blades 50–100 mm long, 6–12 mm wide. Basal sheaths very densely hairy, old sheaths splitting into fibres. Spikelets 3–5 mm long. Racemes 5–20, 30–100 mm long; spikelets lanceolate; lower glume 5-nerved; upper lemma with mucro 0,3–0,5 mm long. *Flowering December to May*. Wooded grassland, roadsides and old farmland, often in wet areas on clay or loam. *Acocks 16634*.

W S C N E

panicoides P. Beauv.

Annual, tufted (erect or prostrate, often spreading cart-wheel-like), up to 0,9 m high. Leaf blades 20–250 mm long, 5–18 mm wide. Spikelets (2,5–)3,5–4,5(–5,5) mm long. Inflorescence of 2–7(–10) racemes, 10–90 mm long; lower glume less than half the spikelet length; cross-veins often present on upper glume and lemmas; awn on upper lemma 0,3–1,0 mm long. *Flowering October to May*. Weedy or overgrazed places and in gardens and cultivation. *Smook 4243*.

W S C N E

stolonifera (Gooss.) Chippind.

Perennial, rhizomatous (rootstock almost woody) or stoloniferous and tufted (with basal nodes swollen), up to 300 mm tall. Leaf blades 40–130 mm long, 2–9 mm wide. Spikelets 2,5–3,0 mm long. Racemes 2–6, 10–40 mm long; spikelets untidily arranged on rachis; lower glume 3-nerved without stiff hairs on back; awn of upper lemma reduced, shorter than 0,5 mm. *Flowering*

December to April. On sandy or calcareous soils near rivers or pans, often in disturbed places. *Zwanziger 520*.

W S C N E

trichopus (Hochst.) Stapf

(= *U. engleri* Pilg.)

Annual, coarsely tufted (usually erect with few flowering culms), up to 1,7 m high. Leaf blades 50–300 mm long, 5–20 mm wide. Spikelets 2,5–5,5 mm long. Racemes 3–20, 10–140 mm long; spikelets ovate; lower glume two-thirds the spikelet length, 3-nerved, tip broadly rounded or truncate with a tuft of 1–5 stiff hairs on middle nerve, a third of the way from tip; upper lemma with mucro 0,5–1,0 mm long. *Flowering December to April*. Usually on sandy soils in wooded grassland or on floodplains and riverbanks, often in cultivated lands. *Van Rooyen 3271*.

W S C N E

Vulpia C.C. Gmel. (s. Afr.: 4 spp.) 9904180

Koekemoer, 1990. In Gibbs Russell *et al.*, Grasses of southern Africa: 354–355.

bromoides (L.) Gray*

Annual, culms solitary or numerous and then loosely tufted, up to 0,6 m high. Leaf blades 100–200 mm long, 0,5–3,0 mm wide. Spikelets 7–14 mm long (excluding awns). Inflorescence 20–120 mm long, up to 15 mm wide, well exerted from uppermost leaf sheath; spikelets usually secund and often almost perpendicular to central axis; lower glume half to three-quarters as long as upper; upper glume 3–10 mm long, acute or shortly awned; callus of lemma rounded. *Flowering August to January*. In weedy and disturbed rocky places such as roadsides and along streams. Native to Europe. *Du Toit 1040*.

W S C N E

muralis (Kunth) Nees*

Annual, culms solitary or loosely tufted, up to 0,7 m high. Leaf blades 1–3 mm wide. Spikelets 5–10 mm long (excluding awns). Inflorescence 20–160 mm long, well exerted from uppermost leaf sheath; spikelets usually appressed to central axis; lower glume a quarter to half as long as upper; upper glume 3–10 mm long, acute; callus of lemma rounded. *Flowering September to December*. Generally in dry habitats on calcareous or limestone soils and in disturbed areas such as road verges. Native to Europe. *Smook 4457*.

W S C N E

PONTEDERIACEAE

Swamp or aquatic herbs. Stems mostly spongy. Leaves arranged in 2 ranks. Inflorescence a terminal spike, often subtended by a spathe-like leaf. Flowers $\pm$ irregular. Perianth segments 3 + 3. Stamens 6. Ovary superior, 3-locular. Fruit a capsule.

Key after Obermeyer in F.S.A. 4,2: 61 (1985).

- 1a Stamens 3 **Heteranthera**
- 1b Stamens 6 **2**
- 2a Perianth segments free to base; 1 stamen larger with a blue anther and an erect apical tooth **Monochoria**
- 2b Perianth forming a tube and zygomorphic limb; with 3 short and 3 long stamens **Eichhornia**

Eichhornia Kunth (s. Afr.: 2 spp.) 0921000

Obermeyer. 1985. F.S.A. 4,2: 63–66.

crassipes (Mart.) Solms*
(= *Pontederia crassipes* Mart.)

Perennial, aquatic herb, free-floating or rooted in mud, up to 0,8 m high. Leaves uniform, clustered, emergent, with a spade-shaped lamina and swollen petiole. Stamens 6, 3 short and 3 long. Ovary 3-locular. Capsule many-seeded. *Flowers blue*. Rivers and dams. Native to South America. *Onderstall 785*.

W S C N E

Heteranthera Ruiz & Pav. (s. Afr.: 1 sp.) 0924000

Obermeyer. 1985. F.S.A. 4,2: 68–69.

callifolia Rchb. ex Kunth
(= *H. kotschyana* Fenzl ex Solms)

Fleshy, creeping, aquatic herb, up to 300 mm tall. Leaves with cordate, floating blades, ± 50 mm long.

Spikes up to 10-flowered. Stamens 3. Ovary 3-locular. Capsule many-seeded. *Flowers blue, white, mauve or violet; February*. Swampy areas, vleis, pans or rock pools. *Germishuizen 36*.

W S C N E

Monochoria Presl (s. Afr.: 1 sp.) 0920000

Brown. 1901. F.T.A. 8: 51.
Obermeyer. 1985. F.S.A. 4,2: 61–63.

africana (Solms) N.E. Br.

Tufted, aquatic annual herb, up to 0,75 m high. Leaves with lamina cordate to ovate, ± 100 mm long. Perianth segments free to base. Stamens 6, one stamen larger, with a blue anther and an apical tooth. Ovary 3-locular, with numerous ovules. Capsule many-seeded. *Flowers blue; February*. Pans. *Zambatis 1637*.

W S C N E

POTAMOGETONACEAE

Herbs with deciduous stems forming colonies in fresh or occasionally brackish water, submerged except for spikes, which are exerted during anthesis and, in some species, the floating leaf blades. Roots in a circle around nodes of rhizome. Rhizomes usually well developed, rarely absent, persistent or plants perennating by formation of winter buds. Flowers bisexual, regular. Perianth segments 4. Carpels 4, free, 1-locular. Fruit a drupe with a beak.

Potamogeton L. (s. Afr.: 7 spp.) 0058000

Obermeyer. 1966. F.S.A. 1: 60–70.

crispus L.

Perennial herb, up to 1,5 m high. Leaves all submerged, uniform, wider than 4 mm, leaf margin toothed and undulate. Spikes few-flowered. Beak nearly as long as fruit. *Flowering October to December*. Fresh water, dams, rivers. *Crawford 235*.

W S C N E

octandrus Poir.

Perennial herb, up to 1 m high. Leaves submerged but with floating involucral leaves, subtending flower spikes, narrow. Submerged leaves with a well-developed lacunar system bordering midrib. Stipule folded. *Flowering October to April*. Dams. *Mauve 5000*.

W S C N E

pectinatus L.

Submerged, perennial herb. Stems varying in length in proportion to depth of water. Leaves all submerged,

narrow. Stipules adnate to lamina below where it forms a folded sheath with a whitish margin, free as a ligule above. *Flowering November to April*. Fresh or brackish water, pans, dams. *Mauve 4998*.

W S C N E

pusillus L.

(= *P. panormitanus* Biv.)

Submerged, long-rooted herb. Stems up to 1 m long. Leaves all submerged, very narrow, usually 2 mm wide. Lacunar system bordering midrib not developed or very narrow. Stipule tubular, pale brown. Fruit smooth. *Flowering November to March*. Fresh water, dams, streams. *Ubbink 1237*.

W S C N E

schweinfurthii A.W. Benn.

Perennial herb, up to 200 mm tall. Leaves all submerged, uniform, over 10 mm wide, upper leaves sometimes floating, net-veined, leaf margin entire, smooth or undulate. Spikes many-flowered. Beak of fruit short. *Flowering July to December*. Fresh water, rivers, dams. *Crawford 102*.

W S C N E

thunbergii Cham. & Schltdl.

Perennial herb, up to 1 m high. Primary submerged leaves if in deep water soon disintegrating; mature leaves floating, with an elliptic to ovate, coriaceous lamina, margin smooth, veining indistinct. *Flowers green; November to March*. Mud banks and deep water, pools, rivers. *Scheepers* 849.

W S C N E

trichoides Cham. & Schltdl.

Small wiry herb, up to 0,75 m high. Leaves all submerged, usually 1 mm wide. Lacunar system bordering midrib not developed or very narrow. Stipule folded. Fruit usually tuberculate and with a basal tooth. *Flowering September to February*. Freshwater ponds. *Loxton sub PRE 57678*.

W S C N E

RESTIONACEAE

Rush- or sedge-like herbs. Rootstock tufted or rhizomatous, densely covered with scaly sheaths. Stems with a leaf sheath at each node. Leaf sheaths usually convolute, free at margins, rarely produced at apex into a leaf-like extension. Florets unisexual, mainly hidden within bracts. Perianth glumaceous, usually of 6 segments in 2 series. Stamens 3, opposite inner perianth segments. Ovary superior. Fruit a capsule or a nut.

Ischyrolepis Steud. (s. Afr.: 49 spp.) 0804030

Linder. 1985. *Bothalia* 15: 387–503.

schoenoides (Kunth) H.P. Linder

(= *Restio schoenoides* Kunth,

= *Restio sieberi* Kunth var. *schoenoides* (Kunth) Pillans)

Perennial herb, up to 500 mm tall, rhizomatous. Leaf sheaths closely convolute. Male and female inflores-

cences similar; inflorescence dark brown. Spikelets with more than 4 flowers, 8–15 mm long. *Flowering November to July*. Grassland, mountainous areas. *Venter 12534*.

W S C N E

STRELITZIACEAE

Herbs or trees. Leaves distichous, often large. Flowers bisexual, arranged in a cincinnus in axil of a spathe. Sepals 3, free or ± adnate to corolla. Petals 3, variously connate, sometimes very unequal. Stamens 5(6), the sixth one sometimes petaloid. Ovary inferior, 3-locular. Fruit a capsule.

Strelitzia Aiton (s. Afr.: 5 spp.) 1319000

Dyer. 1946. *Flower. Pl. Afr.* 25: t. 997.

caudata R.A. Dyer

Perennial herb, up to 2 m high. Stems unbranched, with tuft of leaves at apex. Sepals white, with upper pair widely diverging from the lowest; lowest sepal with a

keel extending from ± its middle into a slender lobe or tail. Petals light mauve; two lower ones with basal portions forming a boat-shaped depression with margin undulate and crisped. *Flowers white and light mauve; June*. Forest margins, open, rocky but moist situations. *Dyer 4802*.

W S C N E

TECOPHILAEACEAE

Herbs of varied habit. Rootstock a rounded tuber or tunicated corm. Stems annual, sometimes prickly. Leaves cauline and alternate or basal, 2–many, distichous or rosulate. Flowers with pedicels usually recurved. Perianth with 6 free, spreading segments or forming a short tube, usually pink or yellow. Stamens 6, inserted in throat of perianth tube or base of segments. Ovary semi-inferior, 3-locular. Fruit a capsule.

Walleria Kirk (s. Afr.: 2 spp.) 1231000

Dyer. 1961. *Flower. Pl. Afr.* 34: t. 1321.

Carter. 1962. *Kew Bull.* 16: 185.

nutans Kirk

Perennial herb, up to 0,6 m high. Leaves sessile, linear to ovate, sometimes scabrid or armed with prickles.

Flowers solitary. Perianth segments 6, forming a short tube, spreading. Stamens attached to perianth segments at throat of tube; anthers yellow with blue or purple tips. *Flowers pink, mauve or pale blue; October to January*. Bushveld, wooded mountainsides. *Hardy 407*.

W S C N E

TYPHACEAE

Herbs with creeping rhizomes; growing in fresh water or marshes. Leaves mostly basal, arranged in 2 ranks, long, linear, with a flattened blade. Flowers unisexual, very numerous in a very dense, long, cylindrical spike; male flowers in upper and female flowers in lower part. Perianth reduced to bristles or scales. Stamens 3. Ovary superior, on a short stalk. Fruit covered with silky hairs.

Typha L. (s. Afr.: 2 spp.)

0049000

Anderson. 1966. F.S.A. 1: 53–56.

capensis (Rohrb.) N.E. Br.

(= *T. latifolia* L. subsp. *capensis* Rohrb.)

Perennial herb, up to 2 m high. Stem erect, simple, terminated by dense, cylindrical flower spikes. Leaves

distichous, linear, apex obtuse, 0.4–1.5 m long, 4–20 mm broad. Spike with upper male portion 150–300 mm long, lower female portion shorter. *Flowers brown or yellowish brown; September to April.* Marshes, dams. Behr 826.

W	S	C	N	E
---	---	---	---	---

VELLOZIACEAE

Plants with fibrous, often erect stems covered with persistent leaf sheaths. Leaves linear, spirally set, crowded at ends of stems, fibrous, forming a sheath round stem. Flowers regular, showy. Perianth segments 3 + 3, free or basally united. Stamens 6. Ovary inferior, 3-locular. Fruit a capsule. Seed reddish brown.

Key after Dyer, Gen. 2: 959 (1976).

- Ovary ± round in cross-section, hairy or spiny, with multicellular hairs; style simple, short; stigma columnar; anthers dorsifixed; leaves with a transverse absciss band towards base **Xerophyta**
- Ovary 3-angled without multicellular hairs; style elongate; stigma capitate; anthers basifixed; leaves persistent, with several, long normal leaves, alternating with several bract-like leaves **Talbotia**

Talbotia Balf. (s. Afr.: 1 sp.)

1247020

Hilliard & Burtt. 1971. Notes R. bot. Gdn Edinb. 31: 32–33.

Smith & Ayensu. 1974. Kew Bull. 29: 181–205.

elegans Balf.

(= *Vellozia elegans* (Balf.) Oliv. ex Hook. f.,
= *Vellozia talbotii* Balf.)

Fibrous, perennial plant from base, with branches up to 150 mm long. Leaves linear-lanceolate, 100–200 mm long, interspersed along stems with a series of sheathing, bract-like leaves. *Flowers single on thin peduncles, 50–150 mm long, white, pale blue or mauve; November to March.* Montane grassland, between rocks along streams. *Venter 12634.*

W	S	C	N	E
---	---	---	---	---

equisetoides Baker var. **pauciramosa** Smith & Ayensu

(= *X. wentzeliana* (Harms) Sölch)

Dwarf shrub, up to 500 mm tall. Branches, including leaf sheaths, long and slender, much longer than thick. Leaf blades glabrous or with only marginal trichomes; leaf sheaths not splitting, 30 mm long. Ovary trichomes appressed, 0.2–0.6 mm long. *Flowers mauve; December to February.* Grassland, rocky outcrops. *Van Rooyen 3274.*

W	S	C	N	E
---	---	---	---	---

humilis (Baker) T. Durand & Schinz

(= *Vellozia humilis* Baker)

Mat-forming perennial herb, up to 50 mm tall. Tepals not longer than 15 mm, outer aristate. *Flowers mauve-pink; July to April.* Bushveld and woodland, rocky ridges. *Codd 4109.*

W	S	C	N	E
---	---	---	---	---

Xerophyta Juss. (s. Afr.: 8 spp.)

1247010

Baker. 1896. F.C. 6: 244–246.

Coetzee, Van der Schijff & Steyn. 1973. Dinteria 9: 3–25.

Smith & Ayensu. 1974. Kew Bull. 29: 181.

equisetoides Baker var. **equisetoides**

(= *Vellozia equisetoides* (Baker) Baker)

Dwarf shrub, up to 500 mm tall. Branches, including leaf sheaths, very short and stout, ± as long as thick. Leaf blades glabrous or subglabrous. Ovary trichomes appressed, 0.2–0.6 mm long. *Flowers mauve; October to December.* Grassland, rocky outcrops. *Codd 6196.*

W	S	C	N	E
---	---	---	---	---

retinervis Baker

(= *Vellozia clavata* (Baker) Baker,
= *Vellozia retinervis* (Baker) Baker)

Dwarf shrub, up to 2 m high, branched, with many sheaths of wiry, brown, parallel fibres. Leaves usually smooth on edge. Ovary trichomes ± spreading, 1.0–1.2 mm long. *Flowers blue or purplish blue; August to February.* Grassland, rocky outcrops. *Theron sub PRE 38385.*

W	S	C	N	E
---	---	---	---	---

schlechteri (Baker) N.L. Menezes

(= *Vellozia rosea* Baker,
= *Vellozia schlechteri* Baker)

Perennial herb, up to 200 mm tall. Leaf blades persistent, slowly and irregularly disintegrating with age. Stigmas shorter than style base. *Flowers pinkish white; November to May.* Grassland, rocky crevices. *Van Vuuren 1432.*

W S C N E

villosa (Baker) Smith & Ayensu

(= *Vellozia villosa* Baker)

Dwarf shrub, up to 500 mm tall. Leaf blades densely hairy underneath or on both sides, linear-subulate, fal-

cate. Ovary covered with long, soft, fascicled hairs. *Flowers bluish purple; August to February.* Grassland. *Sheepers 1034.*

W S C N E

viscosa Baker

(= *Vellozia viscosa* (Baker) Baker)

Perennial herb, up to 150 mm tall. Leaf blades regularly deciduous. Perianth glandular on outside. Stigmas 4–5 times style base. Ovary viscosa. *Flowers white, pink or mauve; October to April.* Grassland, rock crevices. *Kluge 1451.*

W S C N E

XYRIDACEAE

Herbs of moist or marshy places; rhizome swollen, short, thick and $\pm$ vertical. Leaves linear, basal, often in 2 ranks, forming a sheath at base. Flowers small, subtended by overlapping papery bracts and clustered in heads on a stiff, erect, unbranched shoot. Sepals 3. Petals 3, free, stalked, yellow, fragile. Stamens 3, opposite and fused to petals. Ovary superior, usually 3-locular. Fruit a capsule.

Xyris L. (s. Afr.: 7 spp.)

0826000

Lewis & Obermeyer. 1985. F.S.A. 4,2: 1–8.

anceps Lam.

Coarse, annual herb, up to 400 mm tall. Leaves distichous, 2–8 from a small base. Scape ancipitous, uniformly green. Spikes many-flowered. Bracts stramineous. *Flowers yellow; October.* Seepage bog. *Tinley 3061.*

W S C N E

capensis Thunb.

(= *X. rubella* Malme)

Tufted, perennial herb, up to 300 mm tall. Leaves distichous, 2–8 from a small base. Scape terete, green above, lower half golden brown and shiny. Spikes $\pm$ 6-flowered, bracts shiny brown. Sometimes paedogenic. *Flowers yellow; October to May.* Marshes, on riverbanks, grassy seepage areas. *Codd & Dyer 9008.*

W S C N E

congensis Büttner

(= *X. umbilonis* Nilss.)

Tufted, perennial herb, up to 0,85 m high. Roots thin. Leaves clustered on compact rhizomes, linear. Bracts of spikes $\pm$ uniform, dark brown in a fairly uniform spiral. Spikes ovoid, many-flowered. *Flowers yellow; July to June.* Along streams. *Leistner 193.*

W S C N E

gerrardii N.E. Br.

Tufted, perennial herb, up to 300 mm tall. Leaves clustered on compact rhizomes, linear. Spikes ellipsoid to obovoid, $\pm$ 6-flowered. Lower bracts larger than upper. Bracts with scarious splitting margins. *Flowers yellow; November to January.* Streambanks, seepage areas. *Smook 2573.*

W S C N E

nivea Welw. ex Rendle

(= *X. obscura* N.E. Br.)

Perennial herb, up to 300 mm tall, with base of plant often subbulbous, fibrous, twisted, mid-brown. Roots thin. Leaves clustered on compact rhizomes, linear. Spikes ovoid, few-flowered. Bracts of spikes $\pm$ uniform. *Flowers yellow; December to March.* Grassland scattered with boulders, sand, gravel, swamps. *Lavranos 9366.*

W S C N E

rehmannii Nilss.

Tufted, perennial herb, up to 1,2 m high. Leaves clustered on compact rhizomes, linear. Spikes subspherical, $\pm$ 20-flowered. Bracts with entire margins, often with a small, greyish, median patch below apex, lower bracts larger than upper. *Flowers yellow; November to January.* Swamps, streambanks. *Sheepers 762.*

W S C N E

ZANNICHELLIACEAE

Aquatic herbs, monoecious or dioecious. Rhizomes creeping, matted, bracteate. Leaves alternate, opposite or ternate, linear, strap-shaped or tubular. Flowers unisexual. Perianth absent or present, flask-shaped or rarely of 3 small scales. Male flower with 2 (rarely 1 or 3) united anthers. Carpels free. Fruit a drupelet.

Zannichellia L. (s. Afr.: 1 sp.)

0062000

Obermeyer. 1966. F.S.A. 1: 77-79.

palustris L.

Submerged annual herb, brittle; forming dense mats resembling fine grass. Stems erect, thin, up to 500 mm

long. Leaves ternate or opposite. Inflorescence umbellate. *Flowers green; October to March.* Fresh or brackish water, pans. *Allan 163.*

W S C N E

ZINGIBERACEAE

Herbs with thick, aromatic rhizomes. Leaves in 2 rows, sheathed at base; blade usually large with nerves diverging obliquely from midrib. Flowers mostly bisexual, zygomorphic. Perianth 6-merous, 2-seriate; outer 3 united in a tube, calyx-like; inner corolla-like. Stamen 1, sometimes accompanied by petaloid staminodes. Ovary inferior, (2)3-locular. Fruit fleshy and indehiscent. Seeds mostly covered by a large divided aril.

Siphonochilus Wood & Franks (s. Afr.: 3 spp.)

1346010

Kam. 1980. Notes R. bot. Gdn Edinb. 38: 1-12.

Burt. 1982. Notes R. bot. Gdn Edinb. 40: 369-373.

aethiopicus (Schweinf.) B.L. Burt(= *Kaempferia aethiopica* (Schweinf.) Benth.,= *Kaempferia ethelae* J.M. Wood)

Perennial herb with a thick aromatic rhizome. Stems usually short. Flowers arising at ground level, usually

just as leaves appear. Corolla consisting of 3 crinkly petals: 2 smaller ones above and 1 larger lobe below. *Flowers pale pinkish mauve; November to December.* Forest. *Van Warmelo sub PRE 34817.*

W S C N E

DICOTYLEDONS

Key to groups after Dyer, Gen. 1: 6–28 (1975).

- 1a Gynoecium composed of 2 or more free carpels with separate styles and stigmas (sometimes, in Nymphaeaceae, carpels immersed in tissue of expanded torus) 2
- 1b Gynoecium composed of 1 carpel or of 2 or more united carpels with free or united styles, or if carpels free below then styles or stigmas united 4
- 2a Petals absent **Group 3**
- 2b Petals present 3
- 3a Petals free from each other **Group 1**
- 3b Petals $\pm$ united **Group 2**
- 4a Ovules 2 or more in gynoecium, attached to wall of ovary (placentation parietal) 5
- 4b Ovules 1 or more in gynoecium, if more than 1, then attached to central axis or base or apex of ovary 9
- 5a Ovary superior 6
- 5b Ovary $\pm$ inferior, petals present 8
- 6a Petals absent **Group 6**
- 6b Petals present 7
- 7a Petals free from each other **Group 4**
- 7b Petals $\pm$ united **Group 5**
- 8a Petals free from each other **Group 7**
- 8b Petals $\pm$ united **Group 8**
- 9a Ovary superior 10
- 9b Ovary $\pm$ inferior 12
- 10a Petals absent **Group 11**
- 10b Petals present 11
- 11a Petals free from each other **Group 9**
- 11b Petals $\pm$ united **Group 10**
- 12a Petals absent **Group 14**
- 12b Petals present 13
- 13a Petals free from each other **Group 12**
- 13b Petals $\pm$ united **Group 13**

Group 1

- 1a Leaves opposite, without stipules; carpels as many as petals; herbs, often succulent **CRASSULACEAE**
- 1b Leaves alternate, sometimes all radical 2
- 2a Aquatic herbs with long-petiolate floating leaves, lamina $\pm$ peltate; flowers solitary, long-pedunculate, often large and conspicuous 3
- 2b Plants terrestrial; leaf lamina not peltate 4
- 3a Carpels immersed in tissue of expanded torus; petals numerous; leaf lamina cordate as well as peltate **NYMPHAEACEAE**
- 3b Carpels not immersed in tissue of torus; petals 3; leaf lamina peltate, not cordate **CABOMBACEAE**
- 4a Stamens perigynous, inserted at mouth of calyx tube; leaves pinnate or digitate, with stipules; trees, shrubs or herbs, sometimes scrambling with prickles **ROSACEAE**
- 4b Stamens hypogynous, not inserted on calyx 5
- 5a Sepals 6–24 in 2 or more series, free or inner ones united; shrublets or woody climbers with small dioecious flowers **MENISPERMAEAE**
- 5b Sepals 2–5 in 1 series, free or united 6
- 6a Herbs; leaves crenate or lobed or much divided; sepals free, herbaceous or petaloid, median (posterior) one sometimes spurred **RANUNCULACEAE**
- 6b Trees or shrubs, sometimes climbing 7
- 7a Leaves pinnate or 3-foliate; stamens twice as many as petals; carpels 5 **CONNARACEAE**
- 7b Leaves simple; sepals 2 or 3, valvate, free or united; anthers often longer than filaments, commonly with broad prolongation of connective above thecae; flowers solitary or fasciculate or in few-flowered cymes **ANNONACEAE**

Group 2

- 1a Leaves opposite; petals united into an elongated tube; succulent herbs or shrublets **CRASSULACEAE**
- 1b Leaves alternate; petals shortly united at or above base; trees or shrubs, sometimes climbing 2
- 2a Leaves 3-foliate; sepals 5, free or almost so; petals 5 **CONNARACEAE**
- 2b Leaves simple; sepals 2 or 3, free or united; petals 6 or 4 **ANNONACEAE**

Group 3

- 1a Sepals united below; stamens perigynous, inserted at mouth of calyx tube; leaves pinnate or digitate or palmately lobed, with stipules; trees, shrubs or herbs, sometimes scrambling with prickles **ROSACEAE** (including **CHRYSOBALANACEAE**)
- 1b Sepals free; stamens hypogynous 2
- 2a Leaves compound, sometimes decompound; sepals petaloid; herbs or soft-wooded climbing or trailing plants . . . **RANUNCULACEAE**
- 2b Leaves simple 3
- 3a Flowers dioecious; woody climbers with alternate leaves 4
- 3b Flowers bisexual; herbs with opposite or subopposite leaves 5
- 4a Sepals 6–18 in 2 or more series; stamens 3–6, free or united into a syndrium; flowers in cymes or racemes; leaves entire or palmately lobed **MENISPERMAACEAE**
- 4b Sepals 5 in 1 series; stamens 10–15, free; flowers in elongated racemes; leaves entire **PHYTOLACCACEAE**
- 5a Leaves entire; calyx herbaceous; flowers small, in cymes or panicles **AIZOACEAE**
- 5b Leaves toothed or lobed; calyx petaloid; flowers large and conspicuous, solitary or few together **RANUNCULACEAE**

Group 4

- 1a Stamens 6, tetradynamous (inner 4 long, outer 2 short); sepals 4; petals 4 or fewer; leaves without stipules; herbs . . **BRASSICACEAE**
- 1b Stamens not tetradynamous 2
- 2a Gynoecium composed of 1 carpel, thus with only 1 placenta in ovary 3
- 2b Gynoecium composed of 2 or more united carpels, thus with 2 or more placentas 8
- 3a Flowers zygomorphic; petals 5 or fewer, sometimes 1; leaves simple or compound; trees, shrubs or herbs, sometimes climbing **FABACEAE**
- 3b Flowers actinomorphic 4
- 4a Leaves 2-pinnate, with stipules; trees, shrubs or herbs, sometimes climbing, flowers in spikes or heads **FABACEAE**
- 4b Leaves simple, 1-pinnate or 1–3-foliolate 5
- 5a Leaves pinnate or 3-foliolate, leaflets dotted with pellucid glands at least at margin; trees or shrubs **RUTACEAE**
- 5b Leaves simple or 1-foliolate, without pellucid glands 6
- 6a Leaves toothed, with stipules; stamens as many as and opposite to petals, united at base; herbs or small shrubs . . **STERCULIACEAE**
- 6b Leaves entire, without stipules; stamens more numerous than petals; trees or shrubs, sometimes climbing 7
- 7a Sepals 5; petals 5; flowers in few-flowered racemes **CONNARACEAE**
- 7b Sepals 3; petals 6; flowers solitary, axillary **ANNONACEAE**
- 8a (2) Leaves opposite or verticillate, simple, not all radical; herbs 9
- 8b Leaves alternate or all radical 10
- 9a Leaves dotted with pellucid glands; stamens more than twice as many as petals, often $\pm$ grouped into bundles; terrestrial plants **CLUSIACEAE**
- 9b Leaves not gland-dotted, bladdery, verticillate; stamens as many as petals; herbs, often hydrophytes **DROSERACEAE**
- 10a Flowers unisexual 11
- 10b Flowers bisexual or sometimes polygamous 13
- 11a Stamens twice as many as petals or more numerous; trees or shrubs without tendrils; petals free in all flowers . . . **FLACOURTIACEAE**
- 11b Stamens as many as petals 12
- 12a Petals smaller than sepals; herbaceous or woody climbers with tendrils; leaves sometimes digitate or palmately lobed **PASSIFLORACEAE**
- 12b Petals larger than sepals; trees or shrubs without tendrils; leaves simple, not lobed **PITTOSPORACEAE**
- 13a Ovary borne on a distinct gynophore 14
- 13b Ovary sessile or subsessile 15
- 14a Flowers with fimbriate or hairy corona outside stamens; styles 3–6; leaves simple; trees or shrubs, sometimes climbing . . . **PASSIFLORACEAE**
- 14b Flowers without corona; style 1 or stigma sessile; leaves simple or digitate; trees, shrubs or herbs, sometimes climbing . . . **CAPPARACEAE**
- 15a Flowers $\pm$ zygomorphic; leaves simple or digitate; herbs or sometimes shrubs or small trees 16
- 15b Flowers actinomorphic 18
- 16a Connective of anthers prolonged above thecae into an appendage; flowers mostly solitary; fruit a 3-valved capsule; leaves simple **VIOLACEAE**
- 16b Connective of anthers not prolonged above thecae; flowers in terminal racemes or spikes 17
- 17a Fruit a capsule dehiscing throughout its length by 2 valves; leaves simple or digitate **CAPPARACEAE**
- 17b Fruit a capsule gaping at apex; leaves simple, sometimes pinnately lobed or divided **RESEDAECAE**
- 18a Stamens 10, with filaments connate into a tube $\pm$ as long as petals **CANELLACEAE**
- 18b Stamens not as above 19
- 19a Stamens more numerous than petals, or as many as and opposite to them 20
- 19b Stamens as many as and alternating with petals 23
- 20a Flowers with disc or corona 21
- 20b Flowers without corona or gland-studded disc 22

- 21a Climbers with tendrils; corona fimbriate outside stamens PASSIFLORACEAE
 21b Shrubs or small trees; disc cupular, crowned by 10 gland-like processes; stamens from within disc GREYIACEAE
 22a Prickly herbs; leaves pinnately lobed; sepals 2 or 3, caducous; fruit a capsule dehiscent by 4-6 short valves at top PAPAVERACEAE
 22b Trees or shrubs; leaves not pinnately lobed; fruit capsular or baccate, not surrounded by persistent wing-like sepals; leaves entire or toothed FLACOURTIACEAE
 23a Styles 2-5, free or shortly united at base 24
 23b Style 1 26
 24a Leaves bearing numerous sticky, stipitate glands; insectivorous herbs DROSERACEAE
 24b Leaves without sticky, stipitate glands; plants not insectivorous 25
 25a Flowers with conspicuous, fimbriate or hairy corona outside stamens; herbs or shrubs, often climbing with tendrils PASSIFLORACEAE
 25b Flowers without corona or corona very small and inconspicuous; herbs without tendrils TURNERACEAE
 26a Stamens accompanied by 2 series of staminodes, outer filiform, inner petaloid; herbs; leaves with pectinate stipules OCHNACEAE
 26b Stamens not accompanied by staminodes; trees or shrubs 27
 27a Connective of anthers prolonged above thecae into an appendage; leaves with stipules VIOLACEAE
 27b Connective of anthers not prolonged above thecae; leaves without stipules PITTOSPORACEAE

Group 5

- 1a Gynoecium composed of 1 carpel, thus with only 1 placenta in ovary; leaves simple or compound, with stipules or stipular spines; trees, shrubs or herbs, sometimes climbing FABACEAE
 1b Gynoecium composed of 2 or more united carpels, thus with 2 or more placentas; leaves without stipules 2
 2a Flowers zygomorphic; stamens fewer than corolla lobes, 4 or 2, inserted on corolla tube 3
 2b Flowers actinomorphic; stamens as many as corolla lobes or more numerous 6
 3a Leaves pinnate; trees; stamens 4; fruit large, subcylindrical, indehiscent BIGNONIACEAE
 3b Leaves simple, sometimes reduced to scales; herbs 4
 4a Plants parasitic on roots; leaves reduced to scales; stamens 4 OROBANCHACEAE
 4b Plants not parasitic; leaves (or solitary leaf) well developed 5
 5a Stamens 4(5), only 2 fertile; capsule $\pm$ cylindrical, twisting spirally; seeds numerous, small GESNERIACEAE
 5b Stamens 4(5), 4 fertile; capsule woody, with long curved beak; seeds numerous, large (10 mm) MARTYNIACEAE
 6a Flowers unisexual, plants monoecious, petals as long as or shorter than corolla tube; mostly herbaceous, sometimes climbers ACHARIACEAE
 6b Flowers bisexual 7
 7a Stamens more numerous than corolla lobes, free from corolla; corolla lobes twice as many as sepals; trees or shrubs ANNONACEAE
 7b Stamens as many as corolla lobes, inserted on corolla tube; corolla lobes as many as sepals; leaves opposite; corolla lobes contorted 8
 8a Shrubs or woody climbers; fruit a large berry or prickly capsule APOCYNACEAE
 8b Herbs; fruit a septicidal capsule, not prickly GENTIANACEAE (including MENYANTHACEAE)

Group 6

- 1a Leaves pinnate or 2-foliolate; trees FABACEAE
 1b Leaves simple or digitately 3-foliolate, sometimes reduced to scales 2
 2a Flowers dioecious; leaves simple; trees or shrubs 3
 2b Flowers bisexual 4
 3a Calyx absent; flowers in catkins; fruit a 2-valved capsule; seeds with basal tuft of long, fine hairs SALICACEAE
 3b Calyx present; flowers solitary or in fascicles or short racemes; fruit a berry; seeds glabrous or covered with woolly indumentum FLACOURTIACEAE
 4a Stamens as many as and opposite to sepals; flowers with fimbriate corona outside stamens; herbs or shrubs, often climbing with tendrils PASSIFLORACEAE
 4b Stamens more numerous than sepals or as many as and alternating with them; trees or shrubs, without tendrils 5
 5a Ovary borne on distinct gynophore CAPPARACEAE
 5b Ovary sessile or subsessile FLACOURTIACEAE

Group 7

- 1a Flowers unisexual; stamens 2-5, anthers often curved or flexuous or folded; herbs or shrubs, usually trailing or climbing with tendrils; leaves often palmately lobed or deeply divided CUCURBITACEAE
 1b Flowers bisexual; stamens with small straight anthers; plants without tendrils 2
 2a Leaves absent or reduced to scales; succulent shrubs, sometimes epiphytic CACTACEAE
 2b Leaves present, well developed 3
 3a Succulent herbs; leaves opposite; stamens numerous, not arranged in bundles; petals numerous MESEMBRYANTHEMACEAE
 3b Trees or shrubs; leaves alternate; stamens arranged singly or in bundles opposite to petals; petals 5-9, persistent FLACOURTIACEAE

Group 8

- Flowers unisexual; leaves alternate, often palmately lobed or deeply divided; stamens 2–5, sometimes united, anthers often curved or flexuous or folded; trailing or climbing herbs or shrubs with tendrils **CUCURBITACEAE**
 Flowers bisexual; leaves opposite or verticillate, entire, with interpetiolar stipules; stamens with straight anthers; trees or shrubs, sometimes climbing, but without tendrils **RUBIACEAE**

Group 9

- 1a Ovary 1-locular, sometimes septate towards base 2
 1b Ovary 2- or more-locular 25
 2a Sepals 1 or 2, free, sometimes caducous 3
 2b Sepals (or calyx lobes) 3 or more 5
 3a Flowers dioecious; sepals 1 or 2; petals 1–4; stamens united into a synandrium; leaf lamina peltate or subpeltate; woody climbers **MENISPERMACEAE**
 3b Flowers bisexual; sepals 2; petals 4 or 5; stamens free or with united filaments; leaf lamina not peltate; herbs 4
 4a Flowers zygomorphic; ovary with 1 ovule; fruit a nut; leaves much divided **FUMARIACEAE**
 4b Flowers actinomorphic; ovary with numerous ovules; fruit a capsule; leaves entire, fleshy **PORTULACACEAE**
 5a Leaves opposite or verticillate, not all radical 6
 5b Leaves alternate, sometimes all radical 14
 6a Leaves with stipules; herbs or shrublets 7
 6b Leaves without stipules 8
 7a Ovary with 2 ovules; stamens 1 or 2; fruit indehiscent, surrounded by fleshy bracts **ILLECEBRACEAE**
 7b Ovary with 3 or more ovules; stamens up to twice as many as petals; fruit a 3–5-valved capsule **CARYOPHYLLACEAE**
 8a Petals and stamens perigynous, inserted on calyx tube; style 1 9
 8b Petals and stamens hypogynous or only slightly perigynous, not inserted on calyx 10
 9a Ovary with 1 apical, pendulous ovule; stamens as many as petals; heath-like shrubs **THYMELAEACEAE**
 9b Ovary with numerous ovules on free-basal or free-central placenta; stamens twice as many as petals or fewer; herbs, shrubs or trees **LYTHRACEAE**
 10a Herbs; ovary with numerous ovules on free-basal or free-central placenta; fruit a capsule; styles 2–5, free **CARYOPHYLLACEAE**
 10b Trees or shrubs, ovary with 1 or 2 basal ovules; fruit drupaceous; stamens as many as and alternating with petals 11
 11a Filaments united at base into a tube or cup **SALVADORACEAE**
 11b Filaments free 12
 12a Ovule 1; styles 3, free or united at base, flowers dioecious or polygamous **ANACARDIACEAE**
 12b Ovules 2–8; style 1 or stigma sessile; flowers bisexual 13
 13a Ovules 2, pendulous from apex of ovary **ICACINACEAE**
 13b Ovules 2–8, erect from base of ovary **CELASTRACEAE**
 14a (5) Leaves compound with 3 or more leaflets; trees or shrubs, sometimes climbing 15
 14b Leaves simple or 1-foliolate 16
 15a Leaves 2-pinnate; flowers bisexual; fruit winged, indehiscent **FABACEAE**
 15b Leaves 1-pinnate or 3-foliolate; flowers polygamous or dioecious; fruit drupaceous **ANACARDIACEAE**
 16a Ovary with 1 ovule 17
 16b Ovary with 2 or more ovules 21
 17a Flowers zygomorphic, inner 2 sepals larger than the others, lowest (median) petal forming a carina, upper 2 petals vestigial or absent; fruit long-winged, indehiscent; trees or shrubs, sometimes climbing **POLYGALACEAE**
 17b Flowers actinomorphic; fruit unwinged, but sometimes surrounded by persistent wing-like sepals 18
 18a Leaves with stipules; stamens as many as petals; herbs **ILLECEBRACEAE**
 18b Leaves without stipules 19
 19a Sepals united into an elongated tube; stamens twice as many as petals, inserted on calyx tube; shrubs, sometimes heath-like **THYMELAEACEAE**
 19b Sepals free or almost so 20
 20a Stamens united into a synandrium; leaf lamina peltate or subpeltate; woody climbers with dioecious flowers **MENISPERMACEAE**
 20b Stamens 1–10, free or almost so; leaf lamina not peltate; flowers polygamous or dioecious; trees or shrubs **ANACARDIACEAE**
 21a (16) Leaves with stipules 22
 21b Leaves without stipules; trees or shrubs 23
 22a Stamens as many as and opposite to petals, united at base; petals and stamens hypogynous; herbs or shrublets with stellate hairs **STERCULIACEAE**
 22b Stamens more numerous than petals, free; petals and stamens perigynous, inserted at mouth of calyx tube; trees or shrubs **ROSACEAE**
 23a Petals imbricate; stamens as many as and opposite to petals; ovules on free-basal placenta **MYRSINACEAE**
 23b Petals valvate 24
 24a Ovules 2, pendulous from apex of ovary; stamens as many as and alternating with petals **ICACINACEAE**
 24b Ovules 2–5, pendulous from apex of central placenta; stamens as many as and opposite to petals, or up to twice as many, or reduced to 3 and accompanied by staminodes **OLACACEAE**

25a	(1) Stamens as many as and opposite to petals	26
25b	Stamens as many as and alternating with petals, or more numerous or fewer	29
26a	Filaments $\pm$ united into a tube or cup, sometimes alternating with staminodes; calyx lobes valvate; herbs or shrubs, often with stellate hairs	STERCULIACEAE
26b	Filaments free, not alternating with staminodes	27
27a	Ovary with numerous ovules in each loculus; fruit a loculicidal capsule; flowers in terminal panicles; trees with gland-dotted leaves	MYRTACEAE
27b	Ovary with 1 or 2 ovules in each loculus; fruit drupaceous or baccate	28
28a	Inflorescences leaf-opposed; herbaceous or woody plants, often climbing with tendrils; leaves simple (often lobed or divided) or digitate; ovules 2 in each loculus; fruit a berry	VITACEAE
28b	Inflorescences axillary; trees or shrubs, often spiny, without tendrils; leaves simple, undivided; ovules 1 in each loculus; fruit drupaceous	RHAMNACEAE
29a	(25) Leaves compound, with 2 or more leaflets	30
29b	Leaves simple or 1-foliolate, sometimes deeply divided	46
30a	Inflorescences bearing tendrils; climbing shrubs or herbs; leaves pinnate or 2-ternate	SAPINDACEAE
30b	Inflorescences without tendrils	31
31a	Herbs; stamens twice as many as petals	32
31b	Trees or shrubs, sometimes climbing	33
32a	Leaves opposite (often unequal in a pair), pinnate or with 2 leaflets, with stipules; style 1; fruit spiny or winged	ZYGOPHYLLACEAE
32b	Leaves alternate (sometimes all radical), pinnate or 3-foliolate, without stipules; styles 5; fruit not spiny	OXALIDACEAE
33a	Anthers 1-theous; leaves digitate, 3-9-foliolate; stamens 10 or more, filaments united below	BOMBACACEAE
33b	Anthers 2-theous; leaves pinnate or 2-pinnate or 2- or 3-foliolate	34
34a	Leaves opposite or subopposite	35
34b	Leaves alternate	36
35a	Leaves imparipinnate or 3-foliolate, dotted with pellucid glands at least at margin; fruit baccate or separating into 2-4 mericarps	RUTACEAE
35b	Leaves paripinnate, leaflets without pellucid glands; fruit a compressed capsule with winged seeds	PTAEROXYLACEAE
36a	Leaves with lateral or intrapetiolar stipules, imparipinnate; flowers $\pm$ zygomorphic, in racemes; stamens 4 or 5	MELIANTHACEAE
36b	Leaves without stipules	37
37a	Filaments united into a tube; leaves pinnate or 2-pinnate	MELIACEAE
37b	Filaments free or only shortly united at base	38
38a	Leaflets dotted with pellucid glands; leaves pinnate or 3-foliolate	RUTACEAE
38b	Leaflets without pellucid glands	39
39a	Ovary with 2 or more ovules in each loculus	40
39b	Ovary with 1 ovule in each loculus	42
40a	Ovules numerous in each loculus; styles 5; fruit baccate; leaves pinnate	OXALIDACEAE
40b	Ovules 2 in each loculus	41
41a	Fruit drupaceous; plants resiniferous	BURSERACEAE
41b	Fruit a capsule; carpels separating from persistent central column; not resiniferous	PTAEROXYLACEAE
42a	Styles 3-5, free and separated at base; flowers polygamous or dioecious	ANACARDIACEAE
42b	Style or styles central or terminal, not separated at base	43
43a	Fruit with carpels separating from persistent central column; ovules on axile placentation; seeds winged	PTAEROXYLACEAE
43b	Fruit not as above; ovules erect or ascending or pendulous	44
44a	Ovules erect or ascending; leaves paripinnate or 2-pinnate or 2- or 3-foliolate	SAPINDACEAE
44b	Ovules pendulous	45
45a	Leaves 2-foliolate; branches armed with straight spines	BALANITACEAE
45b	Leaves imparipinnate or 3-foliolate; branches unarmed or armed with short, hooked prickles	SIMAROUBACEAE
46a	(29) Perianth strongly zygomorphic; sepals 3 or sometimes 5, median one spurred; petals 3; stamens 5, anthers united round ovary; fruit an explosively dehiscent capsule; herbs	BALSAMINACEAE
46b	Perianth actinomorphic or only slightly zygomorphic	47
47a	Leaves opposite or verticillate, not all radical	48
47b	Leaves alternate, sometimes all radical	60
48a	Stamens more than twice as many as petals	49
48b	Stamens up to twice as many as petals	51
49a	Leaves without stipules; sepals free; stamens and petals hypogynous; filaments irregularly arranged or $\pm$ united into bundles; styles 1-5 or absent; leaves usually dotted or streaked with pellucid or opaque glands; trees, shrubs or herbs	CLUSIACEAE
49b	Leaves with stipules	50
50a	Trees; stipules interpetiolar; petals fringed at apex; stamens 15-45, filaments not united into bundles	RHIZOPHORACEAE
50b	Herbs; stipules not interpetiolar; petals not fringed; stamens 15, filaments united below into 5 bundles	GERANIACEAE
51a	Sepals united below into a tube	52
51b	Sepals free or almost so	55
52a	Petals perigynous, inserted at mouth of calyx tube; ovary with numerous ovules in each loculus	53
52b	Petals hypogynous, not inserted on calyx tube; ovary with 1 or 2 ovules in each loculus; trees or shrubs	54

53a	Anthers opening by apical pores; connective often appendaged below anther; leaves with 3 or more parallel longitudinal nerves; herbs or shrubs	MELASTOMATACEAE
53b	Anthers opening by longitudinal slits; connective unappendaged; leaves without parallel, longitudinal nerves; herbs, shrubs or trees	LYTHRACEAE
54a	Stamens twice as many as petals; leaves with interpetiolar stipules; petals fringed at apex; plants not spiny	RHIZOPHORACEAE
54b	Stamens as many as petals; leaves without stipules; petals not fringed; plants spiny	SALVADORACEAE
55a	Ovary with 1 ovule in each fertile loculus (sometimes 1 or 2 of the loculi empty); stamens twice as many as petals; fruit winged; shrubs, often climbing	MALPIGHIACEAE
55b	Ovary with 2 or more ovules in each loculus	56
56a	Leaves lobed or deeply divided; ovary beaked; herbs or shrublets	GERANIACEAE
56b	Leaves not lobed or divided; ovary unbeaked	57
57a	Styles 3–5; herbs or shrublets	58
57b	Style 1; trees or shrubs, sometimes climbing	59
58a	Ovary with numerous ovules in each loculus; sepals entire; leaves with stipules	ELATINACEAE
58b	Ovary with 2 ovules in each loculus; sepals toothed or lobed at apex; leaves without stipules	LINACEAE
59a	Stamens as many as petals, alternating with petaloid staminodes; leaves dotted with pellucid glands	RUTACEAE
59b	Stamens as many as or fewer than petals, not alternating with staminodes; leaves without pellucid glands	CELASTRACEAE
60a	(47) Ovary with 1 ovule in each fertile loculus (sometimes 1 or 2 of the loculi empty)	61
60b	Ovary with 2 or more ovules in each loculus	70
61a	Flowers unisexual or polygamous	62
61b	Flowers bisexual	64
62a	Leaves without stipules; trees or shrubs without stellate hairs or scales; flowers small, in racemes or narrow raceme-like panicles	SAPINDACEAE
62b	Leaves with stipules; plants often with stellate hairs or scales	63
63a	Style 1, short, with large 2- or 3-lobed stigma; fruit with 4 longitudinal wings; stamens numerous; trees	TILIACEAE
63b	Styles 2–5, free or united at base, often lobed or branched; fruit unwinged; stamens 5 or more; trees, shrubs or herbs	EUPHORBIACEAE
64a	Anthers 1-theous; stamens numerous, filaments $\pm$ united into a tube; sepals valvate, with or without an epicalyx of bracteoles; herbs or shrublets, often with stellate hairs	MALVACEAE
64b	Anthers 2-theous	65
65a	Leaves without stipules	66
65b	Leaves with stipules; fruit drupaceous; trees or shrubs	68
66a	Sepals 4; style 1; leaves entire or toothed or $\pm$ pinnately divided; fruit a flattened silicle or separating into 2 cocci; herbs	BRASSICACEAE
66b	Sepals 5; styles 2; leaves entire; fruit separating into 2 cocci	67
67a	Shrubs, often climbing; ovary 3-locular or 2-locular by abortion; styles much elongated; cocci with long, subterminal wing	MALPIGHIACEAE
67b	Herbs; ovary 2-locular; styles short; cocci unwinged or winged along back	AIZOACEAE
68a	Petals and stamens perigynous, inserted at mouth of calyx tube; ovary lateral, inserted on one side of calyx tube; style arising laterally from near base of ovary	ROSACEAE
68b	Petals and stamens hypogynous; ovary central, not inserted on calyx; style or styles central or terminal	69
69a	Ovary deeply lobed, with 1 style, carpels separating in fruit; stamens twice as many as petals or more numerous, free	OCHNACEAE
69b	Ovary entire, with 1 or 3 styles, either with 2 fertile loculi or with 1 fertile loculus and 2 empty loculi, carpels not separating in fruit; stamens twice as many as petals, filaments united at base into a cup	ERYTHROXYLACEAE
70a	(60) Stamens as many as or fewer than petals	71
70b	Stamens more numerous than petals	75
71a	Ovary 5-locular; ovules 2 in each loculus	72
71b	Ovary 2–4-locular; trees or shrubs, sometimes climbing	73
72a	Petals imbricate; leaves $\pm$ lobed or divided, with stipules; ovary and fruit beaked; herbs or shrublets	GERANIACEAE
72b	Petals contorted; leaves not lobed or divided; ovary and fruit unbeaked; herbs	LINACEAE
73a	Petals 2-lobed; fruit drupaceous; leaves entire	DICHAPETALACEAE
73b	Petals not 2-lobed	74
74a	Flowers unisexual; styles 2 or 3, free or united at base, often lobed or branched	EUPHORBIACEAE
74b	Flowers bisexual; style 1	CELASTRACEAE
75a	Leaves without stipules	76
75b	Leaves with stipules	79
76a	Filaments connate or united into a tube	77
76b	Filaments free	78
77a	Filaments united into a tube; fruit not inflated	MELIACEAE
77b	Filaments attached at base; fruit inflated	MELIACEAE
78a	Leaves dotted with pellucid glands, sometimes deeply divided; ovary with 4 or more ovules in each loculus; trees, shrubs or herbs	RUTACEAE
78b	Leaves without pellucid glands; ovary with 2 ovules in each loculus; trees or shrubs, secreting resin	BURSERACEAE

79a	Sepals imbricate; plants without stellate hairs; ovary 5-locular with 2 ovules in each loculus	80
79b	Sepals (or calyx lobes) valvate; plants often with stellate hairs	81
80a	Petals imbricate; ovary beaked, with 5-branched style; herbs or shrublets	GERANIACEAE
80b	Petals contorted; ovary unbeaked, with 5 free styles; trees or shrubs, sometimes climbing	LINACEAE
81a	Filaments free or almost so; trees, shrubs or herbs	TILIACEAE
81b	Filaments $\pm$ united into a tube or into groups of 2 or 3	82
82a	Anthers 2-theous; trees or shrubs	STERCULIACEAE
82b	Anthers 1-theous; herbs or shrubs or sometimes trees	MALVACEAE

Group 10

1a	Ovary 1-locular, sometimes septate towards base	2
1b	Ovary 2- or more-locular	12
2a	Flowers dioecious, males with united petals, females with 1-4 free petals; stamens united into a synandrium; leaf lamina peltate or subpeltate; woody climbers	MENISPERMACEAE
2b	Flowers bisexual; stamens free or with united filaments	3
3a	Ovary with 1 ovule	4
3b	Ovary with 2 or more ovules	7
4a	Flowers zygomorphic, papilionaceous, lowermost 2 petals united and forming a carina; stamens 10, diadelphous, uppermost 1 free, other 9 with united filaments; herbs	FABACEAE
4b	Flowers actinomorphic; stamens not diadelphous	5
5a	Stamens twice as many as calyx lobes, inserted on elongated calyx tube; corolla ring-like, inserted at mouth of calyx tube; ovule pendulous from apex of ovary; shrubs, sometimes climbing	THYMELAEACEAE
5b	Stamens as many as calyx lobes, not inserted on calyx; corolla 4- or 5-lobed, not ring-like; ovule arising from base of ovary	6
6a	Leaves alternate; stamens opposite to corolla lobes; calyx covered with stalked glands; herbs or shrubs, sometimes climbing	PLUMBAGINACEAE
6b	Leaves opposite; stamens alternating with corolla lobes; calyx without stalked glands; shrubs or trees	SALVADORACEAE
7a	Stamens fewer than corolla lobes; flowers $\pm$ zygomorphic; herbs, often aquatic	8
7b	Stamens as many as corolla lobes; flowers actinomorphic or almost so	9
8a	Stamens 2; corolla strongly zygomorphic, tube spurred; leaves undivided or much divided and often bearing insectivorous bladders	LENTIBULARIACEAE
8b	Stamens 4; corolla only slightly zygomorphic, tube not spurred; leaves undivided, without bladders	SCROPHULARIACEAE
9a	Stamens opposite to corolla lobes	10
9b	Stamens alternating with corolla lobes; trees or shrubs	11
10a	Trees or shrubs; fruit indehiscent, usually 1-seeded; leaves alternate	MYRSINACEAE
10b	Herbs; fruit a many-seeded circumscissile or 5-valved capsule, or sometimes 1-seeded and indehiscent; leaves opposite or alternate	PRIMULACEAE
11a	Leaves opposite; corolla lobes and stamens 4; ovules 4, pendulous from apex of 4-winged, free-basal placenta; fruit a compressed, 2-valved capsule	VERBENACEAE
11b	Leaves alternate; corolla lobes and stamens 5; ovules 2, pendulous from apex of ovary; fruit a drupe	ICACINACEAE
12a	(1) Corolla lobes numerous (10 or more)	13
12b	Corolla lobes fewer than 10	15
13a	Styles 5; fruit a 5-valved capsule; herbs with fleshy leaves	MESEMBRYANTHEMACEAE
13b	Style 1; fruit a berry; trees or shrubs, sometimes climbing	14
14a	Corolla lobes in 2 or 3 series, imbricate; stamens twice as many as inner corolla lobes, or as many as and opposite to inner corolla lobes and alternating with staminodes; ovary with 1 ovule in each loculus; leaves alternate	SAPOTACEAE
14b	Corolla lobes in 1 series, imbricate; stamens 2; ovary with 4 or 5 ovules in each loculus	OLEACEAE
15a	Stamens more numerous than corolla lobes	16
15b	Stamens as many as or fewer than corolla lobes	19
16a	Leaves with stipules, often digitate or palmately lobed; flowers unisexual; trees, shrubs or herbs	EUPHORBIACEAE
16b	Leaves without stipules	17
17a	Flowers zygomorphic, lowest (median) petal forming a carina; filaments united into a sheath split on upper side; ovary 2-locular with 1 ovule in each loculus; herbs or shrubs	POLYGALACEAE
17b	Flowers actinomorphic; filaments not united into a sheath; trees or shrubs	18
18a	Ovary with 1 or 2 ovules in each loculus; fruit indehiscent, baccate; flowers bisexual or unisexual	EBENACEAE
18b	Ovary with several or numerous ovules in each loculus; fruit a loculicidal capsule; flowers bisexual; anthers opening by apical pores or by longitudinal slits; style unbranched; plants often heath-like	ERICACEAE
19a	Stamens fewer than corolla lobes, 2-4	20
19b	Stamens as many as corolla lobes; 4 or more	31
20a	Ovary with more than 4 ovules in each loculus; flowers zygomorphic	21
20b	Ovary with 1-4 ovules in each loculus	25
21a	Leaves pinnate, opposite or ternate; stamens 4; fruit a loculicidal capsule with winged seeds; trees or shrubs, sometimes climbing	BIGNONIACEAE
21b	Leaves simple, sometimes deeply divided or reduced to scales	22

- 22a Ovary completely or incompletely 4-chambered, each of the 2 original loculi becoming divided into two by false septum; stamens 4; herbs or sometimes shrubs, with mucilaginous glands **PEDALIACEAE**
- 22b Ovary 2-locular, loculi not becoming divided by false septa 23
- 23a Ovules arranged in more than 2 series on each placenta; stamens 4 or 2; fruit a capsule or sometimes a berry, seeds not borne on hardened hook-like funicles; leaves alternate, opposite or verticillate, sometimes reduced to scales; herbs or shrubs or sometimes trees **SCROPHULARIACEAE**
- 23b Ovules arranged in 1 or 2 series on each placenta; leaves opposite or sometimes alternate 24
- 24a Fruit indehiscent or tardily dehiscent, armed with horns bearing recurved spines, seeds not borne on hardened hook-like funicles; flowers solitary, axillary, stamens 4; leaves $\pm$ sinuate or lobed; herbs **PEDALIACEAE**
- 24b Fruit a loculicidal capsule, without horns, seeds often borne on hardened hook-like funicles (retinacula); flowers solitary or grouped in inflorescences; stamens 4 or 2; leaves unlobed; herbs or shrubs **ACANTHACEAE**
- 25a (20) Stamens 3; peduncles adnate to petioles of subtending leaves; trees or shrubs with alternate leaves **DICHAPETALACEAE**
- 25b Stamens 4 or 2; peduncles not adnate to leaves 26
- 26a Perianth actinomorphic; stamens 2; leaves simple or compound, opposite or sometimes ternate or alternate; trees or shrubs, sometimes climbing **OLEACEAE**
- 26b Perianth zygomorphic 27
- 27a Ovary $\pm$ deeply 4-lobed, style gynobasic; fruit separating into 4 nutlets (or fewer by abortion); leaves simple, opposite or verticillate or sometimes alternate; herbs or shrubs, often aromatic **LAMIACEAE**
- 27b Ovary not deeply 4-lobed, style not gynobasic 28
- 28a Fruit a capsule, dehiscent loculicidally or sometimes failing to dehisce, seeds often borne on hardened, hook-like funicles; ovary 2-locular with 2–4 ovules in each loculus; herbs or shrubs with opposite, simple leaves **ACANTHACEAE**
- 28b Fruit indehiscent or separating into 2 or more pyrenes or cocci, seeds not borne on hardened hook-like funicles 29
- 29a Flowers solitary, axillary; fruit indehiscent, armed with 2 or 4 spines or longitudinally 4-winged; stamens 4; leaves opposite or subopposite, often toothed or pinnately lobed; herbs with mucilaginous glands **PEDALIACEAE**
- 29b Flowers grouped in inflorescences; fruit without spines or wings 30
- 30a Anthers 1-theous; leaves mostly alternate, simple, narrow; ovary 2-locular with 1 apical, pendulous ovule in each loculus; herbs or shrubs **SELAGINACEAE**
- 30b Anthers 2-theous; sometimes confluent; leaves opposite or verticillate, simple or digitate; ovary 2–8-locular with 1 basal or axile ovule in each loculus; herbs, shrubs or trees **VERBENACEAE**
- 31a (19) Leaves absent or reduced to scales 32
- 31b Leaves present, well developed 33
- 32a Slender, twining, parasitic plants; ovary with 2 ovules in each loculus; fruit a capsule; corolla with or without infrastaminal scales **CONVOLVULACEAE**
- 32b Shrubs or succulent plants, not parasitic; ovary with numerous ovules in each loculus; fruit formed of 2 separated, follicular carpels (or 1 by abortion); flowers with corona **ASCLEPIADACEAE**
- 33a Stamens opposite to corolla lobes, sometimes with staminodes; trees or shrubs with alternate leaves **SAPOTACEAE**
- 33b Stamens alternating with corolla lobes 34
- 34a Leaves opposite or verticillate, not all radical 35
- 34b Leaves (at least lower ones) alternate, sometimes all radical 45
- 35a Stamens hypogynous, not inserted on corolla; anthers opening by apical, pore-like slits; heath-like shrubs with small, verticillate leaves **ERICACEAE**
- 35b Stamens inserted on corolla tube 36
- 36a Corolla lobes imbricate 37
- 36b Corolla lobes contorted or valvate 41
- 37a Style 2-branched, branches again 2-branched; ovary 2-locular with 2 ovules in each loculus; fruit a flattened 2-lobed, loculicidal capsule; shrubs **LOGANIACEAE**
- 37b Style unbranched or with 2 short branches at apex 38
- 38a Ovary with numerous ovules in each loculus; fruit a septicidal capsule or sometimes baccate; corolla lobes and stamens 4 39
- 38b Ovary with 1 or 2 ovules in each loculus; fruit drupaceous or separating into pyrenes or nutlets 40
- 39a Trees or shrubs; flowers in cymes, racemes or panicles **LOGANIACEAE**
- 39b Herbs; flowers solitary or paired in axils of leaves **SCROPHULARIACEAE**
- 40a Corolla lobes and stamens 5; herbs, often hispid, with bulbous-based hairs **BORAGINACEAE**
- 40b Corolla lobes and stamens 4; herbs, shrubs or trees **VERBENACEAE**
- 41a Flowers with corona; pollen agglutinated into granules or waxy masses, herbs, shrubs or trees, often climbing 42
- 41b Flowers without corona; pollen not agglutinated 43
- 42a Filaments free, anthers connivent at apex, without horny wings; pollen granular in tetrads, transported on spatulate carrier **PERIPLOCACEAE**
- 42b Filaments united into staminal column, often short; anthers with horny wings; pollen in waxy masses attached by caudicles to horny carrier **ASCLEPIADACEAE**
- 43a Corolla lobes valvate; leaves often with 3 or more longitudinal nerves; trees or shrubs, sometimes climbing, often with axillary spines or tendrils **LOGANIACEAE**
- 43b Corolla lobes contorted 44
- 44a Herbs; fruit a capsule, dehiscent septicidally or rarely berry-like and splitting irregularly **GENTIANACEAE** (including **MENYANTHACEAE**)
- 44b Trees or shrubs, sometimes climbing; carpels becoming separate **APOCYNACEAE**

45a	(34) Leaves all radical; flowers small, in pedunculate spikes or heads; fruit a circumscissile capsule; herbs	PLANTAGINACEAE
45b	Leaves not all radical.	46
46a	Ovary with more than 2 ovules in each loculus	47
46b	Ovary with 1 or 2 ovules in each loculus	50
47a	Corolla lobes contorted; fruit formed of 2 separated carpels; shrubs or trees	APOCYNACEAE
47b	Corolla lobes not contorted; fruit a capsule or berry.	48
48a	Corolla lobes plicate or valvate; herbs, shrubs or trees	SOLANACEAE
48b	Corolla lobes imbricate	49
49a	Fruit a capsule with winged seeds; leaves simple or 3-foliate; spiny shrubs	BIGNONIACEAE
49b	Fruit a berry or capsule, seeds unwinged; leaves simple, herbs or spiny shrubs	SOLANACEAE
50a	Filaments united into a sheath split on upper side; flowers zygomorphic, lowest (median) corolla lobe forming carina; fruit drupaceous; shrubs or trees	POLYGALACEAE
50b	Filaments not united into a sheath	51
51a	Corolla tube split down front, with 4 lobes; anthers 1-theous; ovary 2-locular with 1 apical, pendulous ovule in each loculus; herbs or shrublets with spicate flowers	SELAGINACEAE
51b	Corolla tube not split down front; anthers 2-theous	52
52a	Fruit drupaceous; trees or shrubs	53
52b	Fruit not drupaceous; herbs or shrublets, sometimes climbing	54
53a	Style 2-branched (branches undivided or again 2-branched) or ending in horizontal ring bearing 2-lobed stigma; leaves without stipules; flowers bisexual, in cymes or panicles	BORAGINACEAE
53b	Style absent, stigma sessile; leaves with stipules; flowers dioecious, in axillary cymes or fascicles	AQUIFOLIACEAE
54a	Fruit separating into 4 nutlets (or fewer by abortion); corolla lobes imbricate or sometimes contorted	BORAGINACEAE
54b	Fruit capsular or sometimes indehiscent; corolla lobes plicate or valvate; plants often twining or trailing	CONVOLVULACEAE

Group 11

1a	Ovary with 2 or more ovules in each loculus	2
1b	Ovary with 1 ovule in each loculus	18
2a	Plants aquatic, moss-like or liverwort-like in habit, growing on rocks; flowers small and inconspicuous; stamens 1 or 2; ovary with numerous ovules; fruit a capsule	PODOSTEMACEAE
2b	Plants terrestrial, not moss-like or liverwort-like in habit	3
3a	Leaves opposite or verticillate or all radical	4
3b	Leaves alternate, not all radical	11
4a	Flowers unisexual, trees or shrubs	5
4b	Flowers bisexual; herbs	7
5a	Calyx absent; leaves toothed at apex, flabellate, flowers in catkin-like spikes; ovules numerous in each loculus	MYROTHAMNACEAE
5b	Calyx present; leaves entire, not flabellate; flowers solitary or fasciculate in axils of leaves; ovules 2 in each loculus	6
6a	Leaves with stipules; flowers dioecious; stamens very numerous, spirally arranged on prolonged torus	EUPHORBIACEAE
6b	Leaves without stipules; flowers monoecious; stamens 4-6	BUXACEAE
7a	Calyx spurred, spur adnate to pedicel; ovary beaked; leaves toothed or lobed	GERANIACEAE
7b	Calyx not spurred; ovary unbeaked; leaves entire	8
8a	Sepals united below; stamens perigynous, inserted on calyx tube	9
8b	Sepals free or almost so; stamens hypogynous	10
9a	Style 1; ovary 1-5-locular, with numerous ovules in each loculus; fruit a capsule	LYTHRACEAE
9b	Styles 2-5, or if 1 then ovary 1-locular with few ovules; fruit a circumscissile capsule	AIZOACEAE
10a	Ovary 3-5-locular, with axile placentas	AIZOACEAE
10b	Ovary 1-locular with free-basal or free-central placentation	CARYOPHYLLACEAE
11a	(3) Leaves pinnate; trees with unisexual or polygamous flowers; ovary 2-locular with 2 ovules in each loculus; fruit indehiscent	SAPINDACEAE
11b	Leaves simple or digitate	12
12a	Ovary 1-locular; flowers in racemes or spikes	13
12b	Ovary 2- or more-locular	15
13a	Flowers bisexual; calyx scarious; fruit a circumscissile capsule; herbs	AMARANTHACEAE
13b	Flowers dioecious; calyx not scarious; fruit a drupe; trees or shrubs, sometimes climbing	14
14a	Leaves with stipules; calyx imbricate; stamens opposite to sepals; styles 3, usually 2-lobed	EUPHORBIACEAE
14b	Leaves without stipules; calyx valvate; stamens alternating with sepals; style absent, stigma sessile and multiradiate	ICACINACEAE
15a	Gynoecium composed of 3 or more loosely united carpels, in fruit separating into as many follicles (or fewer by abortion); trees or shrubs with unisexual or polygamous flowers; leaves simple or digitate; sepals valvate, united below; stamens united into a column	STERCULIACEAE
15b	Gynoecium composed of completely united carpels, in fruit forming a capsule or indehiscent or finally separating into winged cocci	16

16a	Ovary borne on distinct gynophore; flowers bisexual; shrubs with solitary, pedunculate, axillary flowers	CAPPARACEAE
16b	Ovary sessile or subsessile; flowers unisexual or polygamous	17
17a	Leaves with stipules; fruit a capsule or indehiscent or separating into 2 winged cocci; trees, shrubs or herbs	EUPHORBIACEAE
17b	Leaves without stipules; fruit a septical capsule with 2 or more longitudinal, membranous wings; shrubs or trees	SAPINDACEAE
18a	(1) Ovary 2-or more-locular	19
18b	Ovary 1-locular	25
19a	Leaves pinnate; trees or shrubs with polygamous or dioecious flowers; fruit drupaceous or baccate	SAPINDACEAE
19b	Leaves simple, sometimes lobed or much divided or reduced to scales or stipular spines	20
20a	Flowers unisexual or polygamous	21
20b	Flowers bisexual	22
21a	Ovary 5-locular, carpels loosely united and becoming separate in fruit; calyx present, valvate, sepals united below, stamens 5–10, united into a column; leaves alternate; trees or shrubs	STERCULIACEAE
21b	Ovary 2–4-locular, carpels completely united and not becoming separate in fruit; calyx present or absent, male flowers sometimes reduced to a single stamen and arranged in common involucre with pedicellate, female flower in their midst; leaves alternate or opposite, sometimes reduced to scales or stipular spines; trees, shrubs or herbs, sometimes climbing or succulent	EUPHORBIACEAE
22a	Sepals united into a tube; stamens twice as many as calyx lobes, perigynous, inserted on calyx tube; ovary 2-locular; fruit a drupe; shrubs or trees	THYMELAEACEAE
22b	Sepals free; stamens hypogynous or almost so	23
23a	Leaves ± toothed or pinnately lobed or divided; style 1; fruit a flattened silicle or separating into 2 cocci; herbs	BRASSICACEAE
23b	Leaves entire; styles 2 or more, free or united at base	24
24a	Ovary 7–10-locular; fruit a berry; flowers in spike-like racemes; herbs or shrublets	PHYTOLACCACEAE
24b	Ovary 2–5-locular; fruit a loculicidal capsule or separating into 2 cocci, with cocci sometimes winged along back; flowers in lax or dense cymes; herbs	AIZOACEAE
25a	(18) Leaves absent or reduced to scales; flowers spicate	26
25b	Leaves present, well developed, not reduced to scales	27
26a	Slender, twining, parasitic plants; flowers not immersed in rhachis of spike; stamens 6–9, accompanied by staminodes; anthers opening by valves	LAURACEAE
26b	Succulent herbs with articulated branches, not parasitic; flowers immersed in rhachis of spike; stamens 1 or 2; anthers opening by longitudinal slits	CHENOPODIACEAE
27a	Leaves with stipules, stipules sometimes forming a sheath (ocrea) surrounding stem	28
27b	Leaves without stipules	39
28a	Leaves 3- or 4-pinnate; calyx petaloid; fruit a stipitate achene borne on slender pedicel; herbs	RANUNCULACEAE
28b	Leaves simple or digitate	29
29a	Ovule pendulous from apex or near apex of ovary; flowers unisexual or polygamous	30
29b	Ovule arising from base or near base of ovary	34
30a	Flowers densely spicate or capitate or crowded in or on an open or flat receptacle or inside hollow, almost closed receptacle (fig), female flowers sometimes immersed in tissue of receptacle; calyx sometimes absent; trees, shrubs or herbs	MORACEAE
30b	Flowers solitary or fasciculate or in cymes or racemes or panicles; calyx sometimes reduced or absent in female flowers	31
31a	Annual herbs; leaves opposite or alternate, all or lower ones palmately divided; male flowers in elongated panicles; female flowers spicate, enclosed by bracts; fruit dry; indehiscent	CANNABACEAE
31b	Trees or shrubs; leaves alternate	32
32a	Stamens as many as calyx segments, 4 or 5; style 2-branched with simple or divided stigmas; fruit a drupe; trees or shrubs	ULMACEAE
32b	Stamens more numerous than calyx segments; style unbranched, sometimes very short	33
33a	Flowers solitary or paired in axils of leaves; leaves 1–3-foliolate with small, narrow leaflets; heath-like shrubs	ROSACEAE
33b	Flowers in axillary racemes or panicles; leaves simple; trees	EUPHORBIACEAE
34a	(29) Leaves opposite, marked with cystoliths; flowers unisexual; herbs or shrubs	URTICACEAE
34b	Leaves alternate	35
35a	Calyx absent; flowers minute, in dense spikes, shrubs, sometimes climbing	PIPERACEAE
35b	Calyx present	36
36a	Styles 2 or 3, free or united below; stamens 4–8; fruit a small nut; stipules often forming an ocrea surrounding stem; herbs or shrubs, sometimes climbing	POLYGONACEAE
36b	Style 1 or absent; stamens 5 or fewer	37
37a	Flowers bisexual; sepals united below, free portions alternating with lobes of an epicalyx; style arising laterally from near base of ovary; herbs with palmately lobed leaves	ROSACEAE
37b	Flowers unisexual; sepals free or united, without an epicalyx; style or sessile stigma terminal	38
38a	Leaves palmate or palmately lobed, without cystoliths; flowers dioecious, male flowers crowded in branched spikes, female flowers in heads; trees	MORACEAE
38b	Leaves simple, sometimes pinnately lobed, often marked with cystoliths; flowers monoecious or dioecious, cymose, cymes often dense or head-like; herbs, shrubs or trees, sometimes climbing or epiphytic	URTICACEAE
39a	(27) Submerged aquatic herbs; leaves verticillate, deeply and bifurcately divided with linear or filiform segments; flowers unisexual, solitary and sessile in axils of leaves	CERATOPHYLLACEAE
39b	Plants not aquatic; leaves alternate or opposite, undivided or sometimes pinnately divided	40

40a	Calyx absent; flowers in spikes	41
40b	Calyx present (sometimes absent in female flowers)	42
41a	Flowers unisexual; stamens 3–12; styles 2, free or shortly united below; leaves alternate; trees or shrubs	MYRICACEAE
41b	Flowers bisexual; stamens 2; style absent, stigma sessile; leaves alternate or opposite or verticillate; herbs, sometimes trailing or climbing or epiphytic	PIPERACEAE
42a	Stamens twice as many as calyx segments or more numerous	43
42b	Stamens fewer than twice as many as calyx segments, sometimes accompanied by staminodes	45
43a	Ovule erect from base of ovary; fruit enclosed in persistent, longitudinally 4-winged calyx tube; spiny shrubs with small, linear, often fasciculate leaves; flowers polygamo-dioecious	NYCTAGINACEAE
43b	Ovule pendulous from apex of ovary; fruit not enclosed in winged calyx tube; plants not spiny	44
44a	Flowers bisexual; sepals united into an elongated tube; stamens inserted on calyx tube; style elongated, slender; shrubs, often heath-like or sometimes trees, with alternate or opposite leaves	THYMELAEACEAE
44b	Flowers dioecious; sepals shortly united at base; stamens not inserted on calyx tube; style absent, stigma sessile; shrubs or trees with opposite or subopposite leaves	TRIMENIACEAE
45a	Anthers opening by valves; calyx 6-lobed; stamens 6–9, accompanied by staminodes; trees	LAURACEAE
45b	Anthers opening by longitudinal slits; calyx with 3–5 segments or lobes	46
46a	Leaves opposite or subopposite	47
46b	Leaves alternate	48
47a	Sepals $\pm$ petaloid, united into a tube constricted above ovary, lower portion of tube persistent and enclosing fruit and often glandular on outside; stamens not accompanied by staminodes; herbs or climbing shrubs	NYCTAGINACEAE
47b	Sepals dry and $\pm$ scarious, free or shortly united at base, not forming a tube constricted above ovary; stamens as many as and opposite to calyx-segments, often alternating with staminodes; herbs or shrubs	AMARANTHACEAE
48a	Twining herbs; sepals united below into a tube with 2 adnate bracteoles outside; flowers in axillary, pedunculate spikes	BASELLACEAE
48b	Plants not twining; sepals free or united, without adnate bracteoles	49
49a	Calyx with 2–4 valvate segments; trees or shrubs; flowers bisexual, in large, bracteate heads or in elongated spikes or racemes; stamens 4, free, opposite to and inserted on calyx segments; fruit a nut	PROTEACEAE
49b	Calyx with 3–5 imbricate segments or sometimes almost completely tubular with indistinct segments; herbs or shrubs	50
50a	Stamens fewer than calyx segments and mostly alternating with the; leaves small, linear; flowers in elongated, simple spikes	PHYTOLACCACEAE
50b	Stamens as many as or fewer than calyx segments and opposite to them	51
51a	Sepals dry and $\pm$ scarious, free or shortly united at base; leaves entire	AMARANTHACEAE
51b	Sepals herbaceous, free or $\pm$ united into a tube; leaves entire or $\pm$ toothed or pinnately divided	CHENOPODIACEAE

Group 12

1a	Parasitic shrubs growing on other shrubs or trees; ovule scarcely distinguishable from surrounding tissue of ovary; calyx truncate or obsolete; stamens as many as and opposite to petals and inserted on them; leaves simple, entire, opposite or alternate, sometimes reduced to scales	LORANTHACEAE (including VISCACEAE)
1b	Plants not parasitic; ovule or ovules clearly distinguishable within ovary	2
2a	Ovary 1-locular	3
2b	Ovary 2- or more-locular	8
3a	Trees or shrubs, sometimes climbing; style 1; unbranched	4
3b	Herbs; styles or style-branches 2–6	5
4a	Ovules borne on free-basal or free-central placenta; fruit baccate; flowers in axillary cymes or fascicles or umbels; stamens twice as many as petals; leaves opposite	MELASTOMATACEAE
4b	Ovules pendulous from apex of ovary; fruit dry, with 2–6 longitudinal wings or angles; leaves flat, often large	COMBRETACEAE
5a	Ovules numerous on free-basal placenta; sepals 2, often deciduous; fruit a circumscissile capsule	PORTULACACEAE
5b	Ovule or ovules pendulous from apex of ovary or on pendulous, apical placentas; sepals or calyx lobes 2–5; fruit not circumscissile	6
6a	Ovules numerous on pendulous placentas; fruit a capsule dehiscent at apex; leaves opposite; flowers bisexual, in axillary pairs; petals and stamens 5	VAHLIACEAE
6b	Ovules 1–4, pendulous from apex of ovary; fruit indehiscent; leaves alternate or opposite, sometimes all radical; flowers bisexual or unisexual, paniculate-spicate or in axillary clusters	7
7a	Leaves small, sessile; flowers in axillary fascicles	HALORAGACEAE
7b	Leaves large, on long petioles; flowers in terminal heads or compound spikes	GUNNERACEAE
8a	(2) Ovule 1 in each loculus	9
8b	Ovules 2 or more in each loculus	16
9a	Stamens twice as many as petals; styles 3–10	10
9b	Stamens as many as petals	12
10a	Leaves verticillate, pinnatisect with filiform segments; aquatic herbs with flowers in interrupted spikes	HALORAGACEAE
10b	Leaves alternate; plants not aquatic	11
11a	Herbs with solitary, axillary flowers; ovary 10-locular; fruit a prickly capsule; leaves $\pm$ pinnately lobed	ROSACEAE
11b	Trees or shrubs with spicate flowers; ovary 3–5-locular; fruit a drupe; leaves entire	RHIZOPHORACEAE

12a	Stamens opposite to petals; shrubs, often climbing with tendrils; fruit often separating into cocci, sometimes winged . . .	RHAMNACEAE
12b	Stamens alternating with petals; plants without tendrils . . .	13
13a	Fruit separating into 2 cocci; herbs, sometimes aborescent; flowers in simple or compound umbels, sometimes capitate; leaves often much divided or compound . . .	APIACEAE
13b	Fruit drupaceous or capsular, not separating into cocci; trees or shrubs . . .	14
14a	Leaves pinnate or digitate or palmately divided; flowers in umbels or racemes or spikes; fruit drupaceous . . .	ARALIACEAE
14b	Leaves simple, undivided . . .	15
15a	Petals and stamens 5; fruit a capsule; flowers unisexual in heads . . .	HAMAMELIDACEAE
15b	Petals and stamens 4; fruit a drupe; leaves opposite, entire or toothed; flowers bisexual or unisexual, in panicles or umbel-like cymes . . .	CORNACEAE
16a	(8) Leaves alternate . . .	17
16b	Leaves opposite . . .	21
17a	Leaves with stipules, often unequal-sided; flowers monoecious; stamens numerous; ovules very numerous in each ovary-loculus; herbs sometimes epiphytic . . .	BEGONIACEAE
17b	Leaves without stipules . . .	18
18a	Styles 2; flowers unisexual or polygamous, in axillary panicles; stamens as many as petals; ovary 2-locular; shrubs . . .	ESCALLONACEAE
18b	Style 1; with an entire or lobed stigma; flowers bisexual or sometimes polygamous . . .	19
19a	Fruit a drupe; petals 2-fid or 2-lobed . . .	DICHAPETALACEAE
19b	Fruit a capsule . . .	20
20a	Stamens as many or twice as many as petals; herbs or shrubs, sometimes aquatic, bisexual . . .	ONAGRACEAE
20b	Stamens numerous, more than twice as many as petals; fruit a berry or drupe; flowers solitary or paired in axils of leaves; ovary 2-locular; leaves gland-dotted; shrublets . . .	MYRTACEAE
21a	(16) Leaves fleshy and succulent . . .	MESEMBRYANTHEMACEAE
21b	Leaves not succulent . . .	22
22a	Stamens as many as petals; petals alternating with incurved scales; trees or shrubs . . .	OLINIACEAE
22b	Stamens twice as many as petals or more numerous; petals not alternating with scales . . .	23
23a	Stamens numerous, more than twice as many as petals; trees or shrubs with gland-dotted leaves . . .	MYRTACEAE
23b	Stamens twice as many as petals . . .	24
24a	Anthers opening by an apical pore; connective often appendaged below anther; leaves with 3 or more parallel, longitudinal nerves; seeds without tuft of hairs; herbs, shrubs or small trees . . .	MELASTOMATACEAE
24b	Anthers opening by longitudinal slits; connective unappendaged; leaves without parallel, longitudinal nerves; seeds with an apical tuft of hairs; herbs . . .	ONAGRACEAE

Group 13

1a	Parasitic shrubs growing on other shrubs or trees; ovule scarcely distinguishable from surrounding tissue of ovary; calyx truncate or shortly lobed; stamens as many as and opposite to corolla lobes and inserted on them; leaves simple, entire, opposite or alternate or sometimes ternate . . .	LORANTHACEAE (including VISCACEAE)
1b	Plants not parasitic; ovule or ovules clearly distinguishable within ovary . . .	2
2a	Ovary 1-locular . . .	3
2b	Ovary 2- or more-locular (sometimes 3-locular with 1 fertile loculus and 2 empty loculi) . . .	7
3a	Ovule 1; flowers actinomorphic or zygomorphic, in involucre heads; fruit indehiscent, often crowned by persistent calyx forming a pappus of bristles or scales . . .	4
3b	Ovules numerous on free-basal placenta; flowers actinomorphic, not in involucre heads . . .	5
4a	Anthers united into a tube surrounding style; ovule erect from base of ovary; herbs, shrubs or trees; corolla of outer (ray) flowers often differing from that of inner flowers . . .	ASTERACEAE
4b	Anthers free; ovule pendulous from apex of ovary; herbs with opposite leaves . . .	DIPSACACEAE
5a	Calyx composed of 2 often deciduous sepals; fruit a circumscissile capsule; stamens as many as and alternating with corolla lobes or more numerous; herbs . . .	PORTULACACEAE
5b	Calyx 4- or 5-lobed; fruit not circumscissile; stamens as many as and opposite to corolla lobes . . .	6
6a	Trees or shrubs; flowers in axillary panicles or racemes; fruit a berry . . .	MYRSINACEAE
6b	Herbs; flowers in terminal racemes; fruit a 5-valved capsule . . .	PRIMULACEAE
7a	(2) Petals united into a deciduous mass (calyptra); stamens very numerous; trees or shrubs with gland-dotted leaves . . .	MYRTACEAE
7b	Petals $\pm$ united into a tube, not into a deciduous mass; stamens not more than twice as many as corolla lobes . . .	8
8a	Ovary 3-locular with 2 empty loculi, fertile loculus with 1 apical, pendulous ovule; stamens 3; fruit indehiscent, often crowned by persistent calyx forming a feathery pappus; herbs with opposite leaves . . .	VALERIANACEAE
8b	Ovary 2- or more-locular without empty loculi or not as above . . .	9
9a	Trailing or climbing herbs or shrubs with tendrils; flowers unisexual; stamens 3–5, anthers sometimes curved or flexuous or folded; leaves often palmately or pedately lobed or deeply divided . . .	CUCURBITACEAE
9b	Plants without tendrils; flowers bisexual or sometimes unisexual . . .	10
10a	Leaves opposite or verticillate, with interpetiolar or intrapetiolar (sometimes leaf-like) stipules and entire margin; trees, shrubs or herbs, sometimes climbing . . .	RUBIACEAE
10b	Leaves alternate or opposite, or spirally imbricate, without stipules, sometimes reduced to scales . . .	11

- 11a Stamens indefinite; leaves fleshy MESEMBRYANTHEMACEAE
 11b Stamens definite; leaves rarely succulent 12
 12a Stamens twice as many as corolla lobes; anthers opening by apical pores; flowers in axillary racemes; trees or shrubs with alternate leaves ERICACEAE
 12b Stamens as many as corolla lobes; anthers opening by longitudinal slits 13
 13a Fruit a drupe; ovary with 2 or more ovules in each loculus; flowers $\pm$ regular; petals bifid or bilobed DICHAPETALACEAE
 13b Fruit a capsule 14
 14a Corolla lobes imbricate; capsule circumscissile; flowers actinomorphic, in terminal spikes; anthers free, hydrophytes SPHENOCLEACEAE
 14b Corolla lobes valvate; capsule dehiscent by valves 15
 15a Flowers actinomorphic; anthers free CAMPANULACEAE
 15b Flowers zygomorphic, 1- or 2-lipped; anthers cohering in a tube around style, very rarely free LOBELIACEAE

Group 14

- 1a Ovary 2- or more-locular 2
 1b Ovary 1-locular 4
 2a Flowers bisexual, solitary and subsessile in axils of leaves; leaves opposite, without stipules; herbs ONAGRACEAE
 2b Flowers unisexual; leaves with stipules 3
 3a Flowers in heads; stamens as many as calyx segments; ovary with 1 ovule in each loculus; trees or shrubs with entire leaves HAMAMELIDACEAE
 3b Flowers in cymes or panicles; stamens numerous; ovary with very numerous ovules in each loculus; sepals petaloid; herbs, sometimes epiphytic, with alternate, often unequal-sided leaves BEGONIACEAE
 4a Ovules 2 or more 5
 4b Ovule 1 8
 5a Plants leafless, parasitic on roots; flowers solitary, subsessile on rhizome; ovules very numerous on apical, pendulous placentas HYDNORACEAE
 5b Plants with leaves, leaves sometimes reduced and very small; flowers solitary in leaf axils or grouped in inflorescences; ovules 2-4 6
 6a Stamens twice as many as calyx lobes; trees, shrubs or scramblers; flowers in racemes, spikes or heads; fruit indehiscent, often with 2-5 longitudinal wings COMBRETACEAE
 6b Stamens as many as calyx lobes 7
 7a Ovules 2-4, pendulous from free-basal placenta; style 1 with an entire or divided stigma; flowers solitary or in cymes or racemes, bisexual or unisexual; herbs or shrubs, often parasitic on roots and sometimes with reduced leaves SANTALACEAE
 7b Ovules 4, pendulous from apex of ovary; styles 4; flowers clustered in axils of leaves, unisexual or polygamous; herbs, not parasitic HALORAGACEAE
 8a Fleshy herbs, parasitic on roots, leaves reduced to scales; flowers unisexual, in involucre heads, or male flowers paniculate and female flowers united in paniculate heads BALANOPHORACEAE
 8b Plants not parasitic; leaves well developed 9
 9a Flowers unisexual, densely capitate or arranged in or on an open flat receptacle, female flowers sometimes solitary in receptacle; trees, shrubs or herbs MORACEAE
 9b Flowers cymose or paniculate-spicate 10
 10a Trees with entire or palmately 3-5-lobed leaves; flowers cymose, unisexual or polygamous; fruit a nut crowned by 2 elongated wings formed from persistent accrescent calyx lobes HERNANDIACEAE
 10b Herbs with radical long-petiolate, toothed, reniform leaves; flowers paniculate-spicate, bisexual or unisexual; fruit small, unwinged, drupaceous GUNNERACEAE

ACANTHACEAE

Herbs, shrublets, shrubs. Leaves opposite from $\pm$ swollen nodes, without stipules. Inflorescence often with large and leafy bracts subtending individual flowers. Flowers irregular, 2-lipped. Petals 4 or 5, united. Stamens 2 or 4, attached to petals. Ovary superior, 2-locular, with 2 or more ovules per locule. Fruit an explosive, $\pm$ club-shaped capsule. Seeds often hairy, borne on small, hook-like outgrowths.

Key partly after Dyer, Gen. 1: 581-584 (1975).

- 1a Corolla lobes contorted in bud with no lobe wholly within or without; stamens mostly 4, anther thecae at equal height 2
 1b Corolla lobes not contorted in bud, 1 lobe wholly within or without in bud; stamens 2 or 4 10
 2a Seeds without retinacula, rugose; flowers conspicuous, subtended by 2 relatively large, opposite bracts which envelop the small calyx. *Thunbergia*
 2b Seeds with retinacula, covered at least on margins with fine hairs which spring out on contact with water. 3

3a	Ovules 3 or more in each locus	4
3b	Ovules 2 or 1 in each locus	6
4a	Corolla 2-lipped; tube cylindrical below, widening above; anther thecae parallel, not spurred	Hygrophila
4b	Corolla $\pm$ regularly lobed	5
5a	Pollen ellipsoid, longitudinally grooved; capsule seed-bearing from near base; anther thecae separating, spurred	Ruellioipsis
5b	Pollen globose, honeycombed; capsule with seed in upper part, with solid base	Ruellia
6a	Valves of placenta rising elastically from base of ripe capsule ejecting the seeds	7
6b	Valves of placenta not rising elastically from base of capsule	8
7a	Bracts subtending flowers foliaceous; calyx $\pm$ equal to corolla tube in length	Phaulopsis
7b	Bracts subtending flowers large, lower bracts smaller or absent; calyx 4- or 5-partite, shorter than corolla tube	Petalidium
8a	Stamens 2, with or without 2 staminodes	Chaetacanthus
8b	Stamens 4, $\pm$ equal	9
9a	Capsule cylindrical, 4-seeded; bracteoles shorter than calyx	Dyschoriste
9b	Capsule flattened, 2-seeded; bracteoles $\pm$ equal to calyx	Duosperma
10a	(1) Corolla 1-lipped; tube short; stamens 4; anthers 1-locular; pollen with longitudinal bands; ovary with 2 or 1 ovules in each locus	11
10b	Corolla subequally 5-lobed or 2-lipped; seeds without hygroscopic hairs	13
11a	Calyx 4-partite; posticous lip of corolla absent; bracts large, acute, often ending in a spine; seeds with hygroscopic hairs	Blepharis
11b	Calyx 5-partite; corolla limb split down posticous face to give 5-lobed lip on one side	12
12a	Sepals all similar, posticous, 1-nerved	Sclerochiton
12b	Sepals with posticous one largest, 2-nerved, often 2-toothed at apex	Crossandra
13a	Stamens 4, all fertile; anther thecae rounded at base	14
13b	Stamens 2, fertile, sometimes with 2 staminodes in addition	18
14a	Ovules 3 or more in each locus; corolla 2-lipped; anthers 2-theous; flowers in dense, bracteate heads	Crabbea
14b	Ovules 2 or 1 in each locus	15
15a	Corolla distinctly 2-lipped; calyx 5-segmented; anther thecae at slightly different levels	16
15b	Corolla $\pm$ regularly lobed, not distinctly 2-lipped	17
16a	Flowers solitary, axillary, or few near apex of branches	Glossochilus
16b	Flowers in dense cymes or spikes, anther thecae 2, rarely 1	Lepidagathis
17a	Corolla mouth funnel-shaped, hardly oblique, posticous stamens with 1-theous anthers	Neuracanthus
17b	Corolla inflated upwards, mouth oblique; posticous stamens with 2 thecae at equal height; capsule with long stalk	Asystasia
18a	(13) Corolla not conspicuously 2-lipped	19
18b	Corolla distinctly 2-lipped; calyx usually 4- or 5-fid, small or slender, sometimes enclosed by bracts; seeds tubercular or smooth, rarely with stiff or minute, scabrous hairs	22
19a	Calyx large, 4-partite; 2 anticus lobes connate nearly to apex; anthers 2-theous	Barleria
19b	Calyx 5-partite; lobes subequal; shrubs or undershrubs	20
20a	Corolla large and showy; tube cylindrical below, campanulate above; shrubs	Mackaya
20b	Corolla modest in size, cylindrical or funnel-shaped	21
21a	Flowers red	Ruspolia
21b	Flowers pink or mauvish pink	Ruttyruspolia
22a	(18) Calyx 4-partite; segments unequal	Elytraria
22b	Calyx 5-fid	23
23a	Placentas arising elastically from base of capsule valves throwing out the seeds	24
23b	Placentas not arising elastically from base of capsule valves	25
24a	Shrubs; calyx divided $\pm$ halfway down; corolla red; lip 25 mm long	Metarungia
24b	Herbs; calyx divided to base; corolla pink	Dicliptera
25a	Flowers appearing as though enclosed between 2 oblong, opposite bracts which are sometimes connate into a tube	26
25b	Flowers not appearing as though enclosed between 2 opposite bracts	27
26a	Anthers 2-theous, one above the other	Peristrophe
26b	Anthers 1-theous	Hypoestes
27a	Anthers 1-theous; corolla longer than 25 mm, with cylindrical tube widening to throat	28
27b	Anthers 2-theous	29
28a	Flowers white with lilac spots	Ruttya
28b	Flowers pink or mauvish pink	Ruttyruspolia
29a	Lower anther theca tailed or pointed at base	30
29b	Lower anther theca not tailed	32
30a	Corolla tube slender, much longer than limb	Siphonoglossa
30b	Corolla tube not much longer than limb	31
31a	Seeds usually 4 in each capsule, rough or tubercular	Justicia
31b	Seeds 2 to each capsule, smooth and usually shiny	Monechma
32a	Anther thecae at different levels, rounded or mucronate at base	33
32b	Anther thecae at practically same height, rounded at base; shrubs or undershrubs	35

- 33a Shrubs; upper lip long and inverted boat-shaped **Anisotes**
 33b Mainly herbaceous, branches often ribbed; rarely truly shrubby; corolla tube slender, usually cylindrical or subcampanulate 34
 34a Corolla tube slender, cylindrical, longer than lobes **Rhinacanthus**
 34b Corolla tube subcampanulate, shorter than lobes **Isoglossa**
 35a Leaves of 2 forms, lower ones on twigs $\pm$ ovate or lanceolate, ultimate ones orbicular-cordate, subtending and partly hiding flowers; bracts 0 or small **Megalochlamys**
 35b Leaves all $\pm$ similar in shape 36
 36a Flowers subtended by relatively large bracts (foliaceous); corolla cylindrical or funnel-shaped **Ecbolium**
 36b Flowers subtended by small bracts 37
 37a Flowers in pedunculate spikes; corolla tube subcampanulate, shorter than the broad lips; upper lip shortly bilobed; lower lip 3-lobed with middle lobe oblong and others falcately oblong **Duvernoia**
 37b Flowers in terminal panicle (spicate when young); corolla tube subcylindrical, nearly straight; upper lip upcurved with apex spirally curved; lower lip continuous with tube, 3-lobed $\pm$ halfway down; lobes subequal, linear-oblong, deflexed with obtuse recurved tips **Angkalanthus**

Angkalanthus Balf. f. (s. Afr.: 1 sp.) 8044000

Meeuse. 1956. Flower. Pl. Afr. 31: t. 1227.

transvaalensis A. Meeuse

Shrub, 0.50–1.25 m high. Young stems densely pubescent. Leaves ovate or elliptic to oblong, entire, emarginate, pubescent. Inflorescence a terminal panicle. Corolla bilabiate, tube 11–12 mm long. *Flowers white in basal portion, higher up yellowish green changing into purplish mauve; December to June.* Woodland and bushveld. *Codd 8500.*

W S C N E

Anisotes Nees (s. Afr.: 2 spp.) 8096000

Baden. 1981. Nord. J. Bot. 1, 5: 623–664.

Baden. 1995. F.S.A. 30, 3, 1: 65–68.

formosissimus (Klotzsch) Milne-Redh.

(= *Adhatoda formosissima* Klotzsch,
= *Macrorungia formosissima* (Klotzsch) C.B. Clarke)

Erect to semi-scandent shrub, 1.0–2.5(–4.0) m high. Young branches tetragonous, grooved, greenish. Leaves ovate to elliptic, 30–110 $\times$ 19–50 mm. Inflorescence of elongated spikes, 20–130 mm long; bracts rhombic to elliptic, with 5 distinct ribs. Corolla 43–53 mm, glandular-pubescent. Calyx 7–11 mm long. *Flowers pinkish purple, reddish or rarely yellow; August.* Riverine forest. *Van der Schijff 646.*

W S C N E

rogersii S. Moore

Shrub, 0.5–2.0 m high. Young branches terete or angled, not grooved, greyish. Leaves narrowly elliptic to elliptic or obovate, 30–80 $\times$ 15–35 mm. Inflorescence on brachyblasts. Bracts narrowly oblong to narrowly triangular, with single rib. Flowers solitary, axillary. Calyx 3.5–6.0 mm long. Corolla 38–60 mm long, glandular-pubescent. *Flowers red-orange; July to June.* Woodland and bushland. *Pole-Evans 174.*

W S C N E

Asystasia Blume (s. Afr.: 8 spp.) 8007000

Clarke. 1901. F.C. 5, 1: 41–44.

Bremekamp. 1933. Ann. Transv. Mus. 15: 256–257.

Edwards. 1991. S. Afr. J. Bot. 57, 6: 305–309.

atriplicifolia Bremek.

Dwarf shrub, up to 200 mm tall. Old branches with thick layer of cork. Leaves ovate, apex obtuse, margin remotely dentate, base cuneate, trinerved from base. Flowers axillary, solitary. Bracts inconspicuous, linear. *Flowers blue; October to November and in March.* *Hafström & Acocks 1407.*

W S C N E

gangetica (L.) T. Anderson

(= *A. coromandeliana* Nees,
= *Justicia gangetica* L.)

Erect to procumbent annual herb, up to 1 m high. Stems and capsules pubescent. Lower leaves petiolate, ovate. Racemes terminal, loose; bracts inconspicuous. *Flowers purple to pale yellow or white; January to May.* Woodland and river or streambanks; can become weed-like. *Van der Schijff 3579.*

W S C N E

retrocarpa T.J. Edwards

Erect to decumbent perennial herb, up to 350 mm tall. Inflorescence with up to 5 flowers; corolla 9–11 mm long. Leaves sparsely covered with coarse, broad-based trichomes. Pedicels seldom longer than 5 mm, densely covered with retrorse trichomes. *Flowers white; November to March.* Lowveld, arid lowveld and open mopani veld. *Van der Schijff 3527.*

W S C N E

schimperii T. Anderson

Erect to decumbent annual herb, 0.1–0.6 m high. Leaves ovate to elliptic, petiolate. Cymes terminal, dense; bracts much exceeding calyx. *Flowers pink or creamy white; October to June.* Disturbed areas along roadsides and around cultivated fields. *Codd 9222.*

W S C N E

subbiflora C.B. Clarke

Prostrate perennial herb. Leaves glabrescent. Peduncles axillary, long, slender with 1 or 2 flowers. Bracts linear. Pedicels 7–15 mm long; sparsely covered with sessile, glandular trichomes. Corolla 17–20 mm long. *Flowers pale blue or mauve; October and January.* Grassland. *Kluge 2617.*

W S C N E

Barleria L. (s. Afr.: 61 spp.)

7973000

Clarke. 1901. F.C. 5, 1: 44–54.

Obermeyer. 1933. Ann. Transv. Mus. 15, 2: 123–180.

Obermeyer. 1961. Bothalia 7: 445–446.

Balkwill *et al.* 1992. S. Afr. J. Bot. 58, 4: 286–291.**affinis C.B. Clarke**(= *B. heterotricha* Lindau)

Dwarf shrub, up to 1 m high, unarmed, stellate pubescent. Leaves cordate to orbiculate, long-petioled. Flowers axillary, solitary. Bracts linear. Outer sepals oblong, narrow. *Flowers with mauve lobes and white tube; September to June.* Rocky koppies or hillsides. *Codd & Dyer 7740.*

W S C N E

albellata C.B. Clarke

Shrub, 1.0–1.5 m high, unarmed. Branches and leaves tomentose with white dendroid hairs. Leaves broadly ovate, large, long-petioled. Flowers large $\pm$ 45 mm long, in dense globose terminal heads. *Flowers white; January to May.* Dry wooded sandy slopes, rocky hillsides. *Gerstner 6066.*

W S C N E

bolusii Oberm.

Small trailing to erect shrublet, unarmed, hispid. Leaves cordate. Flowers in 3–6-flowered unilateral cymes. Bracts ovate, acuminate, ending in a long spine. Stigmas subconfluent, capitate. *Flowers purplish; December to February.* Deep sandy soil. *Mogg 37202.*

W S C N E

bremekampii Oberm.

Undershrub, up to 1 m high, pilose. Flowers in 1–6-flowered unilateral cyme. Bracts spinose, 15–35 mm long, solid, pubescent. Corolla somewhat 2-lobed, 2 upper lobes short, $\pm$ a quarter as long as 3 lower lobes. *Flowers blue, purple; January and April to October.* Rocky koppies. *Meeuse 10219.*

W S C N E

crossandriformis C.B. Clarke

Herb or shrub, up to 1 m high, with small spines. Flowers in long cylindrical terminal spike, bracts different from ordinary leaves. *Flowers yellow; January to May.* Rocky slopes. *Codd 3706.*

W S C N E

dolomiticola M. & K. Balkwill

Erect to decumbent herb, up to 250 mm tall, unarmed. Young stems pubescent with adpressed hairs, older stems glabrous to glabrescent. Leaves ovate or elliptic, entire, shortly petioled, glabrous or glabrescent, only a few scattered hairs, restricted to midrib on lower surface. Flowers solitary, axillary, small. Capsule 2-seeded, beaked, pubescent. *Flowers white, off-white to pale lilac or mauve with darker purple markings down centre of each lobe; January to February.* Rocky slopes and crests, dolomitic outcrops. *Moffett 1804.*

W S C N E

elegans S. Moore ex C.B. Clarke

Perennial herb, up to 1 m high, unarmed, glabrous. Leaves 50 mm or longer. Flowers in unilateral cymes. Bracts, bracteoles and sepals spinose-dentate. *Flowers blue, mauve or white; February to August.* Riverbanks or other damp situations. *Codd & De Winter 5532.*

W S C N E

galpinii C.B. Clarke

Dwarf shrub, up to 500 mm tall, unarmed. Young leaves densely white tomentose. Flowers in clusters in upper axils. Outer sepals broadly ovate, more than twice as long as inner sepals. *Flowers blue or white; January to April.* Rocky outcrops. *Codd 5316.*

W S C N E

gueinzii Sond.(= *B. barbata* E. Mey. ex C.B. Clarke)

Straggling shrub, up to 2 m high, unarmed, hairy. Leaves ovate, petioled. Flowers in 1–3-flowered unilateral cymes. Outer bracts linear. Outer sepals ovate or obovate, denticulate to dentate. Limb of corolla 2-lipped. *Flowers purple; November to July.* Forest and thickets. *Meeuse 9175.*

W S C N E

holubii C.B. Clarke

Dwarf shrub, up to 0.6 m high, armed. Leaves ovate to obovate, spinose-acuminate. Flowers solitary, axillary; corolla subequally 5-fid, tube long linear. *Flowers yellow; January to March and June to October.* Rocky outcrops. *Nel 5559.*

W S C N E

lancifolia T. Anderson(= *B. alata* S. Moore,= *B. latiloba* Engl.)

Shrub, up to 0.8 m high, unarmed. Young branches white tomentose. Leaves ovate, ovate-lanceolate to linear-lanceolate. Flowers solitary, axillary. Calyx thickly glandular pubescent. *Flowers yellow or pale mauve with white throat; January to July.* Slopes. *Meeuse 9789.*

W S C N E

lugardii C.B. Clarke(= *B. breyeri* Oberm.)

Dwarf shrub, up to 500 mm tall, unarmed. Leaves ovate to elliptic, bicolorous. Flowers solitary in opposite axils, corolla 4-lobed. *Flowers white; December to February.* Rocky slopes. *Story 3490.*

W S C N E

mackenii Hook. f.

Dwarf shrub, up to 1 m high, unarmed. Branches densely white pubescent. Cymes 1-flowered, terminal. Flowers large, corolla 5 lobed. *Flowers mauve; January to March.* Bushveld. *Meeuse 9550.*

W S C N E

macrostegia Nees

Procumbent herb, unarmed, hispid. Leaves linear-oblong, margin thickened, white, spinose-dentate or ciliate. Flowers in many-flowered, thick, unilateral cymes. Bracts ovate, spine-tipped, margins as leaves. *Flowers blue; January to April*. Grassland. Van Wyk 11.

W	S	C	N	E
---	---	---	---	---

matopensis S. Moore

Shrub, up to 1 m high, unarmed, softly hairy, with long white shiny hairs. Leaves lanceolate to ovate, obtuse at apex, margin entire. Cymes 1–few-flowered, in upper axils of branches. Capsule glabrous. *Flowers pale blue or white; January to April*. Stony soil. Pienaar 386.

W	S	C	N	E
---	---	---	---	---

meyeriana Nees

Herb, 500 mm tall, unarmed. Branches scabrid hairy, glabrescent, not white tomentose. Leaf margin denticulate. Flowers solitary or in 2 or 3 clusters in axils. *Flowers blue or mauve; January to April*. Rocky slopes. Buitendag 463.

W	S	C	N	E
---	---	---	---	---

obtusa Nees

Shrub, scrambler, up to 1 m high, unarmed, hairy. Flowers in many-flowered, loose cymes; flowers long-pedicelled. Outer sepals narrow, oblong, broadened towards apex. Bracts linear, often curved. *Flowers bluish purple; February to September*. Hillsides. Van Jaarsveld 408.

W	S	C	N	E
---	---	---	---	---

ovata E. Mey. ex Nees

Herb, up to 0.8 m high, unarmed, pubescent with long tawny hairs. Leaves sessile, ovate to subcordate. Flowers in terminal spike; throat of corolla glabrous. *Flowers mauve; December to April*. Grassland. Codd 8283.

W	S	C	N	E
---	---	---	---	---

oxyphylla Lindau

Herb, up to 500 mm tall, hirsute. Leaves lanceolate. Flowers solitary, axillary. Bracteoles becoming spinose with small marginal teeth in lower half. Sepals spinose-ciliate. *Flowers pale mauve; November*. Grassland. Gertenbach 5469.

W	S	C	N	E
---	---	---	---	---

pretoriensis C.B. Clarke

Low-growing shrub, 0.3–0.6 m high, unarmed. Stem strigose. Flowers solitary, axillary. Bracts linear. Capsule densely hairy. *Flowers white, turning mauve (pink) with age; January to May*. Dry quartzite hillsides. Herman 152.

W	S	C	N	E
---	---	---	---	---

prionitis L.

(= *B. coriacea* Oberm.)

Small shrub, 300 mm tall, armed with axillary spines. Leaves oblanceolate, subsessile. Flowers solitary in

axils of normal leaves. Bracteoles linear, acute, pungent. *Flowers yellow or orange; November to April*. Bushveld. Ellery 326.

W	S	C	N	E
---	---	---	---	---

randii S. Moore

Perennial herb, 300 mm tall, armed. Leaves broadly elliptic with thickened white margins, spinose-acuminate. Inflorescence not spike-like, flowers solitary in axils of normal leaves. *Flowers yellow; January*. Bushveld. Leistner 3186.

W	S	C	N	E
---	---	---	---	---

rehmannii C.B. Clarke

Perennial herb or dwarf shrub, up to 200 mm tall, unarmed, branches hispid. Leaves ovate-oblong, base almost rounded, margins hispid-ciliate. Flowers solitary, axillary. *Flowers white; December to February*. Bushveld, rocky slopes. Codd 3492.

W	S	C	N	E
---	---	---	---	---

rigida Nees

(= *B. rigida* Nees var. *ilicina* (E. Mey. ex Anderson) Oberm., = *B. irritans* Nees var. *rigida* (Nees) C.B. Clarke)

Shrub, ± 150 mm tall, glabrous. Leaves linear-oblong, margins sinuate or with a few small teeth. Cymes reduced to 1–3 flowers. Bracts usually with well-developed, white, thickened marginal spines. Corolla tube longer than 20 mm. Stigma unequal, 1 branch filiform, the other reduced. Style base with ring of short, curly white hair. Capsule 4-seeded. *Flowers pink, blue, white or purple*. Sharpe s.n. PRE 8148.

W	S	C	N	E
---	---	---	---	---

rogersii S. Moore

Perennial herb or dwarf shrub, up to 300 mm tall, unarmed, stellate-pubescent. Leaves elliptic, shortly petioled. Flowers in a spike. Bract apex cirrhose. *Flowers blue; April to June*. McMurtry 1595.

W	S	C	N	E
---	---	---	---	---

rotundifolia Oberm.

Small shrub, up to 1.8 m high, armed, branches covered with soft patent pubescence. Leaves orbicular, spine-tipped. Flowers solitary, axillary, large. *Flowers yellow to orange; December to July*. Rocky slopes near watercourses; in rock crevices. Meeuse 9791.

W	S	C	N	E
---	---	---	---	---

saxatilis Oberm.

Shrub, 0.3–1.5 m high, unarmed, strigose. Flowers in 1–4-flowered sessile cymes. Bracteoles linear to lanceolate-acuminate; spinose-dentate. Outer sepals ovate, spinose-acuminate, with ± 16 marginal spines 1–3 mm long. *Flowers bluish mauve; December to June*. Dry rocky hillsides. Van Jaarsveld 1212.

W	S	C	N	E
---	---	---	---	---

senensis Klotzsch

(= *B. eenii* S. Moore,
= *B. spathulata* N.E. Br.)

Dwarf shrub, up to 1 m high, armed, spines sometimes small. Flowers in a cylindrical terminal spike, bracts spathulate, different from leaves, glaucous. *Flowers yellow or orange; January to September*. Mountainsides, bushveld, savanna, along rivers or streams. *Codd & De Winter 5542*.

W	S	C	N	E
---	---	---	---	---

spinulosa Klotzsch

Shrub, up to 1 m high, unarmed, stellate-pubescent. Flowers in 1–5-flowered cymes. Bracts linear, cuspidate, rigid, spinose-dentate. Sepals broadly ovate, spinose-dentate, herbaceous, papery in fruit. *Flowers pale mauve; March to May*. Hillsides, bushveld. *Van der Schijff 444*.

W	S	C	N	E
---	---	---	---	---

transvaalensis Oberm.

Small shrub, up to 350 mm tall. Stems pilose. Flowers solitary. Bracteoles persistent becoming spinose with 1–3 pairs of marginal spines in lower half. Calyx dentate, becoming spinose. *Flowers mauve or light blue; September to May*. Slopes, bushveld. *Codd & Dyer 4684*.

W	S	C	N	E
---	---	---	---	---

virgula C.B. Clarke

Dwarf shrub, up to 300 mm tall. Stems bifariously pubescent. Leaves linear. Flowers axillary, solitary. Bracteoles becoming spinose with marginal spines in lower half. Outer sepals dentate. *Flowers purple; September to March*. Scrub. *Galpin 514M*.

W	S	C	N	E
---	---	---	---	---

wilmsiana Lindau

(= *B. wilmsii* Lindau ex C.B. Clarke)

Dwarf shrub or herb, up to 500 mm tall, unarmed, glabrous. Leaves sessile, rounded or subcordate at base. Flowers solitary or a few clustered at tips of branches. Outer sepals $\pm$ twice as long as inner sepals. *Flowers mauve; February to March, June and October*. Grassland, woodland, hillsides. *De Souza 519*.

W	S	C	N	E
---	---	---	---	---

Blepharis Juss. (s. Afr.: 43 spp.) 7980000

Obermeyer, 1937. Ann. Transv. Mus. 19,1: 105–139.
Napper, 1970. Kew Bull. 24: 323–326.

acanthodioides Klotzsch

Shrub, 0,3–0,6 m high, unarmed. Leaves linear, spinose-dentate, upper half entire. Flowers in scorpioid cymes. Floral leaves (outer 'bracts') similar to leaves but smaller, whitish pubescent. Inner bracts linear-ovate, with a few spines. Sepals entire, spinose. *Flowers white and mauve; October*. Grassland in stony soil. *Brynard & Pienaar 4330*.

W	S	C	N	E
---	---	---	---	---

angusta (Nees) T. Anderson

(= *Acanthodium angustum* Nees)

Prostrate perennial herb, unarmed. Leaves filiform to linear, entire, pubescent, involute. Flowers in spikes. Lowest sterile bracts similar to upper fertile ones but reduced in size. *Flowers blue; February to July*. Grassland in stony soil. *Van Wyk 1468*.

W	S	C	N	E
---	---	---	---	---

aspera Oberm.

(= *B. diversispina* Eyles)

Prostrate perennial herb, unarmed. Leaves lanceolate to linear, margins spinose-dentate. Spikes ovoid. Lowest sterile bracts of spike similar to upper fertile ones but reduced in size; fertile bracts obovate, margin spinose, ending in short spine. *Flowers blue; January and June to July*. Sandy/rocky soil. *Eicker & Students 153*.

W	S	C	N	E
---	---	---	---	---

breyeri Oberm.

Shrub, up to 500 mm tall, unarmed. Leaves lanceolate-oblong; entire. Spikes ovoid. Lowest sterile bracts similar to upper fertile ones but reduced in size. Bracts ovate, long spinose-acuminate, margins spinose-dentate. *Flowers blue; January to June*. Sandy soil or rocky outcrops; savanna. *Strey & Schlieben 8673*.

W	S	C	N	E
---	---	---	---	---

diversispina (Nees) C.B. Clarke

(= *B. grisea* S. Moore,
= *Acanthodium diversispinum* Nees)

Shrub, up to 0,9 m high, greyish, velvety pubescent. Stems armed with 2–4 pairs of axillary spines. Flowers in decussate spikes. Lowest sterile bracts modified into large spines; fertile bracts ovate, acuminate, bearing spinose teeth from near base, ending in long, patent spine. *Flowers blue; November to June*. Bushveld. *Meeuse 9797*.

W	S	C	N	E
---	---	---	---	---

inaequalis C.B. Clarke

Dwarf shrub, 300–500 mm tall, unarmed, pubescent. Leaves linear, irregularly pinnatifid. Spikes ovoid, leaves present below spikes. Lowest sterile bracts similar to upper fertile ones, but reduced in size; broadly ovate, pubescent, apical spine curved outwards, margin spinose. *Flowers blue, purple; January to March*. Savanna. *Van Rooyen 3405*.

W	S	C	N	E
---	---	---	---	---

innocua C.B. Clarke var. innocua

Procumbent to semi-erect dwarf shrub, unarmed. Leaves elliptic to oblong, up to 30 × 10 mm, sparingly hairy, entire. Spike 1-flowered, enclosed by $\pm$ 8 pairs of bracts. Bracts minutely spinose at tips. *Flowers white, pale blue or mauve; January to March*. Grassland, rocky soil. *Henrici 1537*.

W	S	C	N	E
---	---	---	---	---

innocua C.B. Clarke var. **lancifolia** Oberm.

Procumbent to semi-erect dwarf shrub. Leaves longer and narrower than in var. *innocua*—up to 60 × 5 mm. Spikes and bracts as in var. *innocua*. *Flowers white to mauve; December to January*. Grassland. Rodgers TM 11042.

W S C N E

integrifolia (L.f.) E. Mey. ex Schinz var. **integrifolia**

(= *B. molluginifolia* Pers.,
= *Acanthus integrifolius* L.f.)

Prostrate perennial herb, unarmed. Leaves lanceolate, 10–25 × 3–5 mm, entire. Spikes 1-flowered, enclosed by ± 8 pairs of bracts. Bracts without markings, with spinose-toothed margins and apical spines sharply recurved. Bracteoles present, different from bracts. *Flowers blue; September to May*. Grassland. Van der Schijff 3564.

W S C N E

integrifolia (L.f.) E. Mey. ex Schinz var. **clarkei**

(Schinz) Oberm.
(= *B. clarkei* Schinz)

Prostrate perennial herb. Bracteoles resembling bracts. *Flowering November to March*. Pott 4776.

W S C N E

integrifolia (L.f.) E. Mey. ex Schinz var. **setosa** (Nees) Oberm.

(= *B. hildebrandii* Lindau,
= *B. setosa* Nees)

Prostrate perennial herb, coarsely and patently scabrous hairy. Leaves narrower than in var. *integrifolia*. *Flowering November to January*. Theron 1293.

W S C N E

leendertziae Oberm.

Annual herb, up to 400 mm tall, unarmed. Leaves linear, entire. Flowers in scorpioid cymes. Floral leaves (outer 'bracts') spinose-toothed, recurved. *Flowers white; March to May*. Open places, can become weedlike. Codd 3934.

W S C N E

maderaspatensis (L.) B. Heyne ex Roth subsp. **maderaspatensis**

(= *Acanthus maderaspatensis* L.,
= *B. boerhaaviaefolia* Pers.)

Prostrate perennial herb, unarmed. Leaves elliptic to oblong, entire. Spikes 1-flowered, enclosed by ± 8 pairs of bracts. Bracts obovate with recurved spines. Bracteoles absent. Upper calyx lobe exserted, ultimately twice as long as bracts. *Flowers white; February to April and in July*. Open bushveld or woodland. Codd 5329.

W S C N E

maderaspatensis (L.) B. Heyne ex Roth subsp. **rubiifolia** (Schumach.) Napper

(= *B. rubiifolia* Schumach.)

Prostrate to erect perennial herb. Leaves entire or rarely toothed, scabrid, pubescent or subglabrous. Bracts some-

times with black venation. Calyx wholly included in spike or upper segment shortly exserted. *Flowers white; December to May*. Bushveld, sandy soil. Germishuizen 224.

W S C N E

pruinosa Engl.

Dwarf shrub, up to 450 mm tall. Stems armed with 2–4 pairs of axillary spines up to 40 mm long, 2 pairs of leaves at each node. Flowers in decussate spikes. Lowest sterile bracts modified to large spines; fertile bracts oblong, broader than 5 mm, bearing a few spinose teeth near apex and ending in an acute spine. *Flowers blue, white; December to June*. Sandstone outcrops, hills, stony soil. Codd 4155.

W S C N E

saxatilis Oberm.

Prostrate shrub, not armed. Leaves linear, margins irregular spinose-dentate, revolute. Spikes ovoid. Lowest sterile bracts similar to upper fertile ones but reduced in size. Bracts ovate, membranous, glabrous, apex and margins long spinose. *Flowers blue; February to September*. Rocky hillsides, grassland. Clarke 1197.

W S C N E

serrulata (Nees) Ficalho & Hiern

(= *Acanthodium serrulatum* Nees)

Prostrate, perennial herb. Stems unarmed. Leaves oblanceolate, attenuate, margin setaceo-serrulate. Spikes elongate. Lowest sterile bracts similar to fertile ones but reduced in size; fertile bracts ovate, margins with short, hard bristles. *Flowers blue; December to April*. Savanna or bushveld. Leach & Bayliss 10657.

W S C N E

squarrosa (Nees) T. Anderson

(= *Acanthodium squarrosum* Nees)

Dwarf shrub, up to 300 mm tall, unarmed; with elongate, many-flowered terminal spikes. Leaves on side shoots, not below spikes. Lowest sterile bracts similar to upper ones but reduced in size; lanceolate, spinose-dentate, glabrous. *Flowers mauve or light blue; October to April*. Grassland. Prosser 1760.

W S C N E

stainbankiae C.B. Clarke

Prostrate perennial herb, unarmed. Leaves entire, asperous. Spikes ovoid. Lowest sterile bracts similar to upper fertile ones but reduced in size; broadly ovate, acuminate, spinose-dentate, softly pubescent. *Flowers white; November to April*. Grassland. Bredenkamp 1051.

W S C N E

subvolubilis C.B. Clarke var. **subvolubilis**

(= *B. acuminata* Oberm.)

Spreading to erect or prostrate shrub, unarmed. Leaves lanceolate to ovate, margin spinose-dentate. Spikes ovoid. Lowest sterile bracts similar to upper fertile ones but reduced in size. Bracts broadly ovate, apex acute,

spinose, marginal spines long. *Flowers blue; July to June.* Grassland. *Gerstner 5270.*

W S C N E

subvolubilis C.B. Clarke var. **longifolia** Oberm.

Prostrate or spreading shrub, unarmed. Leaves linear, up to 90 × 5 mm, margin spinose-dentate. Spikes and bracts as in var. *subvolubilis*. *Flowers blue; February to April.* Bushveld. *Galpin M269.*

W S C N E

transvaalensis Schinz

Prostrate perennial herb, unarmed. Leaves oblong, entire, with scattered white setae. Spikes 1-flowered, enclosed by ± 8 pairs of bracts. Bracts with dark horizontal blotches, white woolly along edges; with spinose-toothed margins and apical spines recurved. Bracteoles present. *Flowers purple; December to April.* Grassland. *Mogg 16480.*

W S C N E

uniflora C.B. Clarke

Shrub, up to 500 mm tall, armed, spines up to 25 mm long. Leaves lanceolate, entire. Spikes 1-flowered. Lowest sterile bracts modified into spines, ± 12 mm long; upper fertile bracts ovate-lanceolate, apex spinose, margin with 4 short spines. *Flowers blue; February to March.* Bushveld. *Meeuse 10575.*

W S C N E

Chaetacanthus Nees (s. Afr.: 3 spp.) 7941000

Clarke. 1901. F.C. 5,1: 18–20.

Dyer & Milne-Redhead. 1934. Kew Bull.: 264–265.

burchellii Nees

Perennial herb, up to 300 mm tall. Stems bifarious. Leaves 20–25 mm long, sparingly hairy, elliptic, lower with subacute triangular tip. Bracts large. Calyx teeth with white spreading hairs. Corolla tube up to 25 mm long. *Flowers white with mauve spots; September to January.* Grassland. *Scheepers 698.*

W S C N E

costatus Nees

Perennial herb, 300–500 mm tall. Leaves 15–25 mm long, nearly glabrous, elliptic or oblong, lower subacutely triangular at tip. Calyx and bracts glabrous. *Flowers white to very pale mauve; September to January.* Grassland. *Meeuse 9372.*

W S C N E

setiger (Pers.) Lindl.

(= *C. glandulosus* Nees,

= *C. persoonii* C.B. Clarke)

Perennial herb, 300–500 mm tall. Leaves 6–12 mm long; the lower and middle ones obtuse. Calyx teeth

sparingly hairy to glandular hairy. *Flowers white; September to February.* Grassland. P. & G. Raal 1167.

W S C N E

Crabbea Harv. (s. Afr.: 7 spp.) 7972000

Ficalho & Hiern. 1881. Trans. Linn. Soc. Lond. 2: 24–25.

Clarke. 1899. F.T.A. 5: 118–119.

Clarke. 1901. F.C. 5,1: 38–40.

Brown. 1908. Kew Bull.: 436.

acaulis N.E. Br.

Acaulescent herb. Roots swollen. Leaves rosulate, elliptic-lanceolate to elliptic-ovate. Outer floral bracts pilose, with marginal spines. Heads sessile. *Flowers white; October to April.* Grassland. *Krynauw 1078.*

W S C N E

angustifolia Nees

(= *C. undulatifolia* Engl.)

Decumbent herb. Leaves linear, undulate, subcrenulate. Outer floral leaves herbaceous, softly hairy, margins spiny. Heads sessile. *Flowers white; October to June.* Grassland. *Leistner 548.*

W S C N E

galpinii C.B. Clarke

Herb, up to 200 mm tall. Leaves linear to linear-oblongate. Floral leaves without spines. Heads peduncled. *Flowers white with yellow nectar guides; September to December.* Grassy slopes. *Onderstall 953.*

W S C N E

hirsuta Harv.

Decumbent herb. Leaves ovate, hairy on lower surface. Outer floral leaves herbaceous, softly hairy, margins spiny. Heads sessile or nearly so. *Flowers white or cream; September to May.* Grassland. *Codd 3656.*

W S C N E

nana Nees

Herb, up to 200 mm tall. Leaves oblong-elliptic, up to 100 mm long, scabrid on nerves beneath, otherwise glabrescent. Outer floral leaves papery, minutely hairy, margins spiny. Heads sessile. *Flowers white with yellow throat; November to February.* Stony, grassy slopes. *Jenkins TM11125.*

W S C N E

ovalifolia Ficalho & Hiern

Prostrate herb. Leaves ovate, puberulous. Outer floral leaves herbaceous, with conspicuous hoary hairs; margins spinose-ciliate. Heads sessile. *Flowers white; December to March.* Grassland. *Codd 2561.*

W S C N E

velutina S. Moore

Erect or decumbent herb, up to 200 mm tall. Leaves oblong-elliptic, hairy. Outer floral leaves glabrescent,

with marginal teeth. Heads peduncled. *Flowers white or cream; October to March and in June.* Bushveld. *Retief & Herman 122.*

W S C N E

Crossandra Salisb. (s. Afr.: 4 spp.) 7985000

Clarke. 1899. F.T.A. 5: 112–117.

Vollesen. 1990. Kew Bull. 45,3: 506–533.

Vos & Edwards. 1992. S. Afr. J. Bot. 58,2: 94–99.

fruticulosa Lindau

Shrub, up to 300 mm tall. Leaves subacute to rounded on elongated stems. Bracts subcoriaceous, sparsely to densely and finely puberulous, margins with 2–7(–10) teeth or spines on each side. *Flowers orange-red; October to May.* Bushland and grassland, riverbanks. *Van der Schijff 3948.*

W S C N E

greenstockii S. Moore

(= *C. pungens* auct. non Lindau)

Perennial unbranched herb, up to 300 mm tall. Leaves crowded in basal rosette or opposite on elongated stems, margin entire or slightly crenate. Bracts papery, with spinulose margin, terminating in recurved tip 1,5–5,0 mm long, longer than upper lateral teeth. Bracts, bracteoles, calyx and corolla with capitate glands. *Flowers pale red to scarlet or salmon; June to March.* Grassland, bushland on sandy to loamy soil and on rocky slopes. *Leach 11538.*

W S C N E

mucronata Lindau

Perennial herb, up to 300 mm tall. Branches elongate with many nodes and branchlets, sparingly hairy. Bracts entire, thinly hairy towards margin, apex with short, recurved spine. *Flowers red, orange or apricot; October to December and in May.* Woodland, bushland on sandy to loamy or stony soil or rocky slopes and outcrops, dry forest and thickets. *Letty 23.*

W S C N E

zuluensis W.T. Vos & T.J. Edwards

Perennial acaulescent herb, 45–90(–200) mm tall. Leaves rosulate, obovate, sessile. Bracts glabrescent; peduncles short; corolla sinuses large and seed scales narrowly oblong with toothed apices. *Flowers dark orange with yellow throat, tube cream; September to April.* Bushveld, woodland, sandy, loamy or clay soil. *Codd & De Winter 5046.*

W S C N E

Dicliptera Juss. (s. Afr.: 15 spp.) 8031000

Balkwill et al. 1996. Kew Bull. 51: 1–61.

clinopodia Nees form A

Perennial herb, up to 1,2 m high. Inflorescence axis shorter than 5 mm so that inflorescence appears contracted into axil. Tertiary bracts 3–6 mm broad, with white 'windows' between veins at their bases. Secondary bracts very narrowly lanceolate, with many stalked glandular trichomes. Corolla tube longer than 10 mm, lip in lower position longer than 15 mm. Capsule (6–)7–9(–10) mm long. *Flowers purple; July to June.* Forest edge, riverine bush and sometimes bushveld. *Jacobsen 2866.*

W S C N E

clinopodia Nees form B

As form A, but secondary bracts obovate, markedly apiculate, with few stalked glandular trichomes. Forest edge and sometimes bushveld. *Codd 7797.*

W S C N E

divaricata Compton

Erect to deflexed perennial herb, up to 400 mm tall. Inflorescence axis shorter than 5 mm so that inflorescence appears contracted. Tertiary bracts (2,1–)2,7–3,6 mm broad, often with small 'windows' between veins near base, densely glandular. Corolla tube shorter than 10 mm, lip in lower position shorter than 15 mm, wider at proximal end. Capsule (5,0)5,4–6,7(–7,1) mm long. *Flowers lilac; April.* Bushveld. *Nel 5200.*

W S C N E

eenii S. Moore

Erect to procumbent perennial herb, up to 0,6 m high. Leaves thinly textured, often with very acute tip. Inflorescence axis longer than 5 mm, so that inflorescence does not appear to be contracted. Tertiary bracts (2,1–)2,8–4,2(–4,7) mm broad, 'windows' not clearly differentiated. Corolla tube shorter than 14 mm. Capsule (6,8–)7,1–8,2(–8,4) mm long. *Flowers deep purple; October and January to July.* Rocky hillsides in bushveld. *Germishuizen 817.*

W S C N E

extenta S. Moore

Perennial herb, up to 500 mm high. 'Umbels' up to 2 in each axil. Tertiary bracts elliptic or obovate, (8–)9–11(–12) mm broad, without 'windows'. Corolla tube longer than 7 mm and lip in lower position longer than 11 mm. *Flowers white or light lilac; March to October.* Deep shade in forest. *Balkwill 1506.*

W S C N E

fionae K. Balkwill

Perennial herb, up to 300 mm high. Leaves stiff, almost succulent. Inflorescence axis longer than 5 mm, so that inflorescence does not appear to be contracted into axil, of (1)2(3) inflorescence units umbellately arranged, with 1 'umbel' in each axil. Tertiary bracts elliptic, 3,7–5,2 mm broad. Corolla tube 12–13 mm long, lip in lower position 14,5–15,2 mm long. Capsule 7,2–9,2 mm long. *Flowers white, sometimes flushed very pale*

pink; April to May. Among rocks in grassland on hill-sides. *Balkwill et al.* 3007.

W S C N E

fruticosa K. Balkwill

Dwarf shrub, up to 1.5 m high, sometimes to 2.0 m high. Inflorescence axis longer than 5 mm so that inflorescence does not appear to be contracted. Tertiary bracts 2.5 mm or narrower. Corolla tube 6–10 mm long, lip in lower position 12–20 mm long. Capsule (8.0–)8.6–10.7 (–11.4) mm long. *Flowers cobalt-violet; April to July.* Mixed bushveld in rocky or stony soil. *Balkwill* 785.

W S C N E

heterostegia Nees

(= *Justicia heterostegia* E. Mey.)

Perennial herb, up to 0.6 m high. Leaves ovate, broader than 10 mm. Tertiary bracts broader than 6 mm, ovate. 'Umbels' many in each axil. Corolla tube shorter than 7 mm and lip in lower position shorter than 10 mm. *Flowers white or light lilac; March to September.* Forest edges and valley bushveld. *Van der Schijff* 3885.

W S C N E

leistneri K. Balkwill

Perennial herb, up to 0.9 m high. Stems, leaves and tertiary bracts with smooth green appearance. Inflorescence axis shorter than 5 mm, inflorescence appearing contracted. Tertiary bracts (2.5–)2.7–3.7(–4.9) mm broad. Corolla tube (5.0–)6.5–8.8(–9.7) mm long. Capsule (5.5–)5.9–6.8(–7.1) mm long. *Flowers light purple; October to June.* In shade on streambanks. *Van Wyk* 938.

W S C N E

magaliesbergensis K. Balkwill

Perennial herb, up to 500 mm tall. Stems conspicuously pubescent with curved eglandular hairs, 1–2 mm long. Inflorescence axis shorter than 5 mm, inflorescence appearing contracted. Tertiary bracts (2.4–)2.8–3.5(–3.6) mm broad. Corolla tube shorter than 10 mm, lip in lower position shorter than 15 mm. Capsule (–5.8) 6.2–7.3(–7.5) mm long. *Flowers mauve; January to May.* Riverine forest and bush. *Smith* 6047.

W S C N E

minor C.B. Clarke subsp. **minor**

Procumbent perennial herb, up to 200 mm high. Stems, if pubescent, with straight trichomes, or curved trichomes that do not collapse on drying. Inflorescence axis shorter than 5 mm so that inflorescence appears contracted into axil. Tertiary bracts (2.5–)2.9–4.5(–5.3) mm broad, glabrous when mature. Corolla tube shorter than 10 mm, lip in lower position shorter than 15 mm, broadest in centre. Capsule (5.7–)5.9–6.8(–7.0) mm long. Tubercles on seeds squat and with many minute hooks. *Flowers deep purple; August to April.* Bushveld. *Meeuse* 9434.

W S C N E

minor C.B. Clarke subsp. **pratis-manna** K. Balkwill

As subsp. *minor*, but tertiary bracts with glandular trichomes. Tubercles on edges of seeds taller than broad, with some minute hooks. *Flowers white; January, April and May.* Bushveld. *Balkwill* 1600.

W S C N E

spinulosa Hochst. ex K. Balkwill

Annual herb, up to 0.6 m high. Tertiary bracts narrower than 3 mm and fringed with white hairs. Inflorescence often produced at first or second node, often compounded. Corolla shorter than 8 mm. Capsules shorter than 5 mm. *Flowers purple or lilac; March to November.* Shade in dry Acacia veld. *Wager Tvl.Mus.* 22418.

W S C N E

Duosperma Dayton (s. Afr.: 2 spp.) 7940000

Clarke. 1899. F.T.A. 5: 79–80.

Meyer. 1968. F.S.W.A. 130: 28.

crenatum (Lindau) P.G. Mey.

(= *Hygrophila crenata* Lindau,

= *Disperma quadrisepalum* C.B. Clarke)

Small shrub, up to 500 mm tall. Leaves 35–70 mm long. Corolla $\pm$ 8 mm long. Calyx 4-fid nearly to base, 2 anticus segments connate nearly to tip into 1 obovate-elliptic piece, 3 others equally long. *Flowers white or cream, sometimes with purple spots or streaks; February to March.* Stony soil. *Gertenbach* 4973.

W S C N E

Duvernoia E. Mey. ex Nees (s. Afr.: 2 spp.)

8055000

Meeuse. 1956. Flower. Pl. Afr. 31: t. 1216.

Obermeyer. 1962. Flower. Pl. Afr. 35: t. 1375.

Manning & Getliffe Norris. 1995. F.S.A. 30,3,1: 15–17.

aconitiflora A. Meeuse

Shrub, 1–3 m high. Flowers single on each side of axis at nodes (rarely in threes at lower nodes); bracts ovate, up to 5 mm long, caducous; peduncles quadrate; upper lip about as long as broad, deeply naviculate. *Flowers white to pale cream and pale yellow with mauvish pink blotches; August and March to May.* *Van Jaarsveld* 465. Riverine bush.

W S C N E

adhatodoides E. Mey. ex Nees

(= *Adhatoda duvernoia* C.B. Clarke)

Small tree or shrub, 3–6 m high. Flowers always in threes on each side of axis at nodes; bracts oblanceolate, 10–20 mm long, persistent; peduncles terete; upper lip more than twice as long as broad, shallow. *Flowers white with mauve markings; January to March.* Forest fringes. *De Winter & Killick* 8950.

W S C N E

Dyschoriste Nees (s. Afr.: 11 spp.) 7939000

Clarke. 1899. F.T.A. 5: 71–73.

Clarke. 1901. F.C. 5,1: 15–17.

Moore. 1910. J. Bot., Lond. 48: 250–251.

Moore. 1918. J. Bot., Lond. 56: 36–37.

depressa (L.) Nees(= *Ruellia depressa* L.)

Small shrub, up to 500 mm tall, nearly glabrous. Leaves up to 25 mm long. Flowers clustered. Calyx tubular for a third of its length. Corolla tube shorter than 12 mm, inflated in upper part. *Flowers white; August and November.* Rocky outcrops. Brynard & Pienaar 4301.

W S C N E

erecta C.B. Clarke

Small shrub, up to 500 mm tall. Leaves glabrous, linear-oblong. Flowers scattered, solitary. Calyx tubular for two-thirds of its length. Corolla tube shorter than 12 mm, inflated in upper part. *Flowers pink or white with mauve markings; February to March and in June.* Woodland or shrubland. Raal 1765.

W S C N E

fischeri Lindau

Small shrub, up to 1 m high. Flowers 1–3 in small axillary cymes. Calyx tubular for half its length. Corolla tube $\pm$ 20 mm long, linear nearly to top. *Flowers yellow; October to June.* Hillsides. Meeuse 9726.

W S C N E

monroi S. Moore

Shrub, up to 0.6 m high. Flowers in pseudo-axillary cymes. Calyx tubular for two-thirds of its length. Corolla tube 22 mm long. *Flowers blue; January to June.* Bushveld. Codd 4235.

W S C N E

mutica (S. Moore) C.B. Clarke(= *Calophanes radicans* S. Moore var. *mutica* S. Moore)

Annual herb, 10–20 mm tall, glabrous; branches straight. Flowers clustered. Calyx divided nearly to base, segments linear, aristate, hispid. Corolla tube shorter than 12 mm, inflated in upper part. *Flowers white?* No specimens in PRE.

W S C N E

perrottetii (Nees) Kuntze(= *Calophanes perrottetii* Nees)

Shrub, up to 1.2 m high. Leaves up to 90 mm long, glabrous. Flowers clustered, 3–8 together. Calyx tubular for third of its length. Corolla tube shorter than 12 mm, inflated in upper part. *Flowering November.* Wilms 1194.

W S C N E

rogersii S. Moore

Small shrub, up to 1.2 m high. Leaves 10 mm long, obovate to oblong-obovate, minutely puberulous, subsessile. Flowers solitary. Calyx divided at a third or

halfway down. Corolla tube 15 mm long. *Flowers blue to pale mauve; July to June.* Bushveld. Balkwill 1549.

W S C N E

transvaalensis C.B. Clarke

Dwarf shrub, 400 mm tall. Leaves hairy, elliptic-oblong. Flowers solitary, scattered. Calyx divided halfway down. Corolla tube shorter than 12 mm, inflated in upper part. *Flowers blue to mauve; September and December to May.* Rocky outcrops. Isaacs 162.

W S C N E

Ecbolium Kurz (s. Afr.: 3 spp.) 8048000

Vollesen. 1989. Kew Bull. 44,4: 638–680.

glabratum Vollesen(= *E. amplexicaulis* auct. non S. Moore)

Perennial herb, up to 1 m high. Leaves ovate to elliptic or slightly pandurate, sessile, truncate to slightly auriculate and then clasping stem. Inflorescence axes glabrous or with scattered capitate glands. Calyx glabrous with finely ciliate edges. Corolla pubescent, tube 23–33 mm long. *Flowers greenish or pale blue; January to February.* Acacia bushland. Codd 5234.

W S C N E

Elytraria Michx. (s. Afr.: 1 sp.) 7908000

Engler & Prandl. 1897. Natürl. PflFam. Nachtr. & Register zu Teil 2–4: 304.

Long. 1970. J. Arnold Arbor. 51,3: 278–280.

acaulis (L.f.) Lindau

Acaulescent, rosulate herb. Leaves spatulate. Flowers small, tubular, borne in dense, scapose, terminal spikes; peduncles and inflorescence bearing imbricate, coriaceous bracts. *Flowers white; November to March.* Mopane sandveld. Van der Schijff 3539.

W S C N E

Glossochilus Nees (s. Afr.: 2 spp.) 7970000

Hutchinson. 1909. Kew Bull.: 186.

parviflorus Hutch.

Dwarf shrub, $\pm$ 400 mm tall. Leaves oblong-lanceolate, 10–15 mm long. Calyx segments 5, subequal, linear-lanceolate, glandular-pilose. Corolla 8 mm long. *Flowers white or purple; December.* Bushveld. Zwanziger 530.

W S C N E

Hygrophila R. Br. emend. Heine

(s. Afr.: 9 spp.)

7926000

Burkill & Clarke. 1900. F.T.A. 5: 30–31.

Heine. 1962. Kew Bull. 16: 171–173.

auriculata (Schumach.) Heine

(= *H. spinosa* T. Anderson,
= *Asteracantha longifolia* (L.) Nees)

Herb, up to 0,9 m high. Leaves linear to lanceolate. Flowers densely packed at nodes; with 2–6 spines in each whorl. *Flowers pale mauve to blue; February to June. Wet soil in streambeds, edges of rivers and dams. Codd 6081.*

W	S	C	N	E
---	---	---	---	---

Hypoestes Sol. ex R. Br. (s. Afr.: 3 spp.) 8032000

Balkwill & Getliffe Norris. 1985. S. Afr. J. Bot. 51: 133–144.

aristata (Vahl) Sol. ex Roem. & Schult. var. **alba** K.

Balkwill

Shrub, up to 1,5 m high. Inflorescence appearing verticillate; bracts aristate. Flowers 18–23 mm, corolla pubescent, lip in lower position narrowly elliptic. Calyx 4-lobed, tube 1,5–4,0 mm long. Seeds smooth. *Flowers white; March to August. Afromontane areas. Germishuizen 1083.*

W	S	C	N	E
---	---	---	---	---

forskaolii (Vahl) R. Br. form A

(= *H. verticillaris* non (L.f.) Sol. ex Roem. & Schult.,
= *Justicia forskaolii* Vahl)

Herb, up to 500 mm tall. Leaves narrow, 24–36 × 4,5–13,0 mm; short cystoliths frequent. Inflorescence not appearing verticillate. Bracts obtuse, strigose. Corolla lip in lower position trullate. Calyx 5-lobed. Seeds asperous. *Flowers white, pink or light lilac with dark purple honey guides; February. Dry habitats. Bolus 10860.*

W	S	C	N	E
---	---	---	---	---

forskaolii (Vahl) R. Br. form B

Erect to decumbent herb, up to 0,9 m high. Leaves broad, 19–76 × 12–35 mm; short cystoliths not common. Inflorescence, corolla, calyx and seeds as in form A. Bracts glandular-pubescent with trichomes 0,5–1,0 mm long. *Flowers as in form A; July to June. In shade of trees, kloofs, riverbanks, forest floor. Codd & Dyer 4627.*

W	S	C	N	E
---	---	---	---	---

triflora (Forssk.) Roem. & Schult.

(= *H. phaylopsoides* Moore,
= *Justicia triflora* Forssk.)

Perennial herb, up to 1,5 m high. Cystoliths in leaves predominantly 'boomerang'-shaped. Secondary bracts leaflike, longer than 10 mm. Corolla lip in lower position obovate, corolla almost glabrous. Calyx tube 0,75–1,00 mm long. Seeds verrucose. *Flowers white, pink or pale lilac with dark purple honey guides; July to June. Afromontane forests. Van Jaarsveld 672.*

W	S	C	N	E
---	---	---	---	---

Isoglossa Oerst. (s. Afr.: 15 spp.) 8079000

Clarke. 1901. F.C. 5,1: 79–84.

bolusii C.B. Clarke

Shrub, up to 0,6 m high. Leaves ovate, acuminate, 30 × 20 mm. Spikes terminal, interrupted, viscid-hairy. Bracts 3–5 mm long, oblong. Calyx with many gland-headed hairs. Corolla ± 10 mm long. *Flowers white; March to September. Riverine bush. Galpin 958.*

W	S	C	N	E
---	---	---	---	---

cooperi C.B. Clarke

Herb, up to 400 mm tall. Leaves elliptic, acuminate, 50 × 20 mm. Flowers in loose panicles, terminally. Bracteoles and calyx viscid with many gland-headed hairs. Bracts linear-oblong. Corolla up to 30 mm long. *Flowers white; March. Forest. Raal 1517.*

W	S	C	N	E
---	---	---	---	---

delicatula C.B. Clarke

Subshrub or herb, up to 1,5 m high. Leaves elliptic, acuminate. Spikes interrupted, loose, sparingly hairy. Bracts lanceolate. Calyx with gland-headed hairs. Corolla 10–15 mm long, slender. *Flowers white; January to April and in July. Forest or shade of trees and bushes. Cooper 202.*

W	S	C	N	E
---	---	---	---	---

eckloniana (Nees) Lindau

(= *Rhytiglossa eckloniana* Nees)

Scandent and erect herb, up to 1 m high. Leaves ovate-acuminate. Inflorescence dense terminal spikes. Bracts linear-lanceolate. Calyx with gland-headed hairs. Corolla 10–15 mm long. *Flowers white; April to July. Forest. Stalmans 1659.*

W	S	C	N	E
---	---	---	---	---

grantii C.B. Clarke

Subshrub, up to 1 m high. Leaves ovate, acuminate. Spikes interrupted, viscid-hairy. Bracts spatulate to broadly obovate. Calyx with gland-headed hairs. Corolla up to 15 mm long. *Flowers white; January to May. Bushveld, in shade of other trees or bushes, or forest. Balkwill 784.*

W	S	C	N	E
---	---	---	---	---

hypoestiflora Lindau

Herb, up to 1,5 m high. Leaves elliptic, acuminate. Bracteoles and calyx thinly hispid with white nonglandular hairs. Bracts linear-oblong. Corolla up to 40 mm long, tube slender. *Flowers mauve; March. Woodland and forest. Krynauw 1340.*

W	S	C	N	E
---	---	---	---	---

origanoides (Nees) Lindau

(= *Rhytiglossa organoides* Nees)

Herb, up to 1 m high. Leaves ovate-cordate-cuneate. Spikes densely flowered, terminal, viscid-hairy. Bracts broadly lanceolate. Calyx with gland-headed hairs. Corolla 10–15 mm long. *Flowers white; December to May. Woodland and bushland. Meeuse 10206.*

W	S	C	N	E
---	---	---	---	---

Justicia L. (s. Afr.: 23 spp.)

8094000

Immelman. 1986. *Bothalia* 16: 39–41.
Immelman. 1995. *F.S.A.* 30,3,1: 18–46.

anagaloides (Nees) T. Anderson
(= *Adhatoda anagaloides* Nees)

Perennial, erect herb becoming prostrate. Inflorescence of long-pedunculate, elongate cymes, axillary, single at each node. Flowers sessile, corolla (5–)6–8 mm long. *Flowers white with or without maroon lines; August to May.* Grassland and in open disturbed places, e.g. roadsides. *Germishuizen* 869.

W S C N E

betonica L.

(= *J. betonicoides* Burkill & C.B. Clarke,
= *J. trinervia* Vahl)

Perennial herb or shrub, 0,13–1,00 m high. Bracts and bracteoles whitish with green veining. Inflorescence a terminal strobilate spike-like aggregate of cymes, each cyme usually reduced to a single flower. *Flowers cream to greenish white with mauve markings or mauve; July to June.* Grassland, open bushveld or savanna, often in sandy or rocky soil and along watercourses. *Scheepers* 945.

W S C N E

campylostemon (Nees) T. Anderson
(= *Leptostachya campylostemon* Nees)

Shrub, 0,3–3,0(–7,0) m high. Inflorescence a raceme-like compound cyme, laxly branching, axillary. Flowers pedicellate or sessile; corolla 9–18 mm long, upper lip hooded. Seeds without scales. *Flowers white, cream or greenish with maroon speckles in throat; November to April.* Undergrowth of forests. *Hemm* 487.

W S C N E

exigua S. Moore

Erect or decumbent annual herb. Inflorescence of long-pedunculate, elongate, axillary cymes; cymes 2 per node. Corolla $\pm$ 4 mm long. Capsule up to 4(–6) mm long, glabrous or usually with hairs at apex only. *Flowers white with maroon lines; January, February, May.* A wide variety of habitats, especially woodland and disturbed areas. *Codd* 6593.

W S C N E

flava (Vahl) Vahl

(= *Adhatoda flava* (Vahl) Nees)

Perennial herb or shrublet, 0,1–1,0(–2,0) m high. Inflorescence sessile axillary cymes, approximated at ends of branches; cymes each reduced to single pedunculate flower; in axils of reduced bract-like leaves. Corolla 7–11 mm long. Bracts and calyx densely pubescent but hairs not long and cottony. *Flowers pale to greenish yellow with bright yellow lower lip; July to June.* Disturbed places e.g. roadsides; shade of trees in savanna; rocky outcrops; grassland. *Herman* 128.

W S C N E

glabra J. König ex Roxb.

(= *Raphidospora glabra* (J. König ex Roxb.) Nees)

Perennial herb, 0,3–1,3 m high. Inflorescence a lax, raceme-like, compound axillary cyme, branching; bracts and calyx glabrous or with few hairs; flowers with upper lip not hooded. Capsule 4-seeded. Seeds with long, barbed scales. *Flowers purplish brown or cream striped pink.* Riverine woodland. No specimens for the area in PRE.

W S C N E

heterocarpa T. Anderson subsp. dinteri (S. Moore) Hedrén
(= *J. dinteri* S. Moore)

Annual herb, (0,04–)0,30–0,82 m high. Inflorescence sessile axillary cymes; cymes each reduced to a single pedunculate flower; in axils of normal leaves, well separated. Long cottony hairs on bracts and calyx. Corolla 5–7 mm long. *Flowers pale to deep mauve or violet; January to February.* Shade of trees, on rocky koppies or riverine woodland. *Meeuse & Strey* 10457.

W S C N E

matammensis (Schweinf.) Oliv.

(= *Adhatoda matammensis* Schweinf.)

Erect or decumbent annual herb, up to 500 mm tall. Inflorescence of long-pedunculate, elongate axillary cymes; cymes 2 per node. Corolla 3–5 mm long. Capsule (6–)7–9 mm long, usually with hairs scattered over whole surface. *Flowers white with maroon lines; December to May, July.* Various types of woodland or as a weed in fallow lands. *Acocks* 16748.

W S C N E

minima A. Meeuse

Shrublet, 150–400 mm tall. Hairs, if present, long and multicellular. Inflorescence of long-pedunculate elongate cymes, terminal. Calyx 4-lobed. Flowers sessile; corolla 5–8 mm long. *Flowers creamy white with maroon lines; October to January and in April.* Crevices in rocks and on shallow soil. *Immelman* 659.

W S C N E

montis-salarum A. Meeuse

Small shrub, 200–400 mm tall, with all parts sparsely to densely puberulous. Inflorescence of long-pedunculate cymes, terminal. Calyx 5-lobed. Corolla 7–8 mm long. *Flowers white marked with mauve; October.* In cracks on steep rocky cliffs on mountain slopes. *Schlieben* 7421.

W S C N E

odora (Forssk.) Vahl

(= *J. lycioides* Schinz,
= *J. polymorpha* Schinz)

Perennial herb or shrub, 0,2–1,5 m high. Inflorescence of sessile axillary cymes; cymes each reduced to single pedunculate flower; in axils of normal leaves, well separated. Corolla 3–14 mm long. *Flowers bright yellow; October to June.* Frequently on calcareous soils; undergrowth of savanna. *Immelman* 96.

W S C N E

orchioides L.f. subsp. **glabrata** Immelman

Small woody shrub, 0,14–0,60 m high. Inflorescence of sessile axillary cymes; cymes each reduced to a single pedunculate flower. Bracts, stem and inside of calyx glabrous or with short stout pyramidal papillae. Corolla 7–10 mm long. *Flowers white with maroon markings; February to March*. Open areas, often in calcareous soils. *Leistner 1242*.

W	S	C	N	E
---	---	---	---	---

petiolaris (Nees) T. Anderson subsp. **petiolaris**

(= *Adhatoda petiolaris* Nees)

Perennial herb or shrublet, 0,24–1,30 m high. Leaves 48–145 × 20–70 mm, apex shortly attenuate. Inflorescence of sessile axillary cymes, approximated at ends of branches, densely crowded; cymes each reduced to a single pedunculate flower; in axils of reduced, bract-like leaves. Corolla 11–18 mm long. *Flowers blue-mauve to sky-blue; November and March to July*. Undergrowth in forest and on forest margins. *Van der Schijff 5509*.

W	S	C	N	E
---	---	---	---	---

petiolaris (Nees) T. Anderson subsp. **incerta** (C.B.

Clarke) Immelman

(= *J. incerta* C.B. Clarke)

Perennial herb or shrublet, 100–500 mm tall. Inflorescence of sessile axillary cymes; cymes each reduced to a single pedunculate flower; in axils of reduced, bract-like leaves, separated. Corolla 8–13 mm long. Leaves ovate, 16–30(–40) × 9–22 mm, apex obtuse or occasionally broadly acute. *Flowers blue-mauve to sky-blue; December to April*. In shade in bushland, in sandy soil. *Immelman 660*.

W	S	C	N	E
---	---	---	---	---

protracta (Nees) T. Anderson subsp. **protracta**

(= *J. kraussii* C.B. Clarke,

= *J. pulegioides* C.B. Clarke)

Perennial herb or shrublet, 0,16–1,00(–2,00) m high. Inflorescence of sessile axillary cymes; cymes each reduced to a single pedunculate flower; in axils of normal leaves, well separated. Corolla 6–10(–13) mm long. Capsule up to 10 mm long, delicate in texture. Bracts and calyx glabrous or with short hairs. All other parts with medium to long multicellular hairs. *Flowers white with or without mauve stripes; July to June*. Grassland, savanna, forest margin and forests. *Vahrmeijer 2385*.

W	S	C	N	E
---	---	---	---	---

protracta (Nees) T. Anderson subsp. **rhodesiana** (S.

Moore) Immelman

(= *J. rhodesiana* S. Moore)

Perennial herb or shrublet, 0,16–1,00(–2,00) m high. Inflorescence as in subsp. *protracta*. Corolla up to 10 mm long. All parts densely and minutely puberulous with 2-celled hairs. *Flowers white with mauve; October to June*. Rock outcrops, rocky slopes and sandy places. *Meeuse 9419b*.

W	S	C	N	E
---	---	---	---	---

Lepidagathis Willd. (s. Afr.: 2 spp.) 7971000

Clarke. 1899. F.T.A. 5: 120–129.

scabra C.B. Clarke

Perennial herb, ± 200 mm tall. Leaves narrowly elliptic, up to 65 mm long. Sepals 5, with spreading white hairs, none gland-tipped. Corolla ± 8 mm long. Spikes terminal or on short axillary branches. *Flowers blue to mauve; January to May*. Shade of bush clumps in bushveld. *Buitendag 1228*.

W	S	C	N	E
---	---	---	---	---

Mackaya Harv. (s. Afr.: 1 sp.)

8039000

Phillips. 1923. Flower. Pl. Afr. 3: t. 104.

bella Harv.

Shrub, 1,0–1,5 m high. Leaves elliptic or elliptic-lanceolate, acuminate, narrowed at base; margins lobulate or subentire, nerves distinct below. Flowers opposite in terminal lax raceme. Corolla tube 35 mm long, lobes 20 mm long. *Flowers lilac; June and September to December*. Forest, in dense shade. *Stalmans 53*.

W	S	C	N	E
---	---	---	---	---

Megalochlamys Lindau (s. Afr.:

4 spp.)

8061000

Vollesen. 1989. Kew Bull. 44.4: 605–638.

hamata (Klotzsch) Vollesen

(= *Ecbolium hamatum* (Klotzsch) C.B. Clarke,

= *E. lugardiae* N.E. Br.,

= *M. strobilifera* C.B. Clarke)

Shrub, 1,0(–1,5) m high. Hairs on young branches spreading. Inflorescence axes pubescent. Bracts without or with short (shorter than 0,5 mm) capitate glands; with acumen 1–3 mm long. Corolla tube 10–13 mm long, lobes 13–18 mm long. Capsule sparsely puberulous or glabrous. *Flowers pale to bright blue; January to April*. Woodland and bushland, riverine forest and thicket, on stone or rocky granitic slopes or hills. *Pole Evans 4269*.

W	S	C	N	E
---	---	---	---	---

kenyensis Vollesen subsp. **australis** Vollesen

Shrub, up to 1 m high. Hairs on young branches appressed. Spikes up to 150 mm long. Bracts with capitate glands 0,5–1,0 mm long and 1–2 mm long acumen; clasping ripening capsules. Capsule puberulous in upper half. *Flowers pale or bright to deep (royal) blue; September and December to March*. Wooded grassland, bushland, riverine thicket. *Meeuse 10596*.

W	S	C	N	E
---	---	---	---	---

revoluta (Lindau) Vollesen subsp. **cognata** (N.E. Br.)

Vollesen

(= *Ecbolium cognatum* N.E. Br.,

= *E. revolutum* (Lindau) C.B. Clarke)

Shrub, up to 1,25 m high. Hairs on young branches appressed. Inflorescence axes with noncapitate glandu-

lar hairs and longer capitate glands. Bracts with capitate glands up to 0,5 mm or absent; with 2–6 mm long acumen. Flowers in numerous pairs; corolla tube 9–13 mm long. Capsule puberulous or sparsely so all over or apically only. *Flowers bright blue; August and December to April.* Woodland and bushland on sandy, stony or loamy soil or on rocky slopes or grassland. *Werdermann & Oberdieck 1993.*

W S C N E

Metarungia Baden (s. Afr.: 2 spp.) 8030000

Baden. 1981. Nord. J. Bot. 1,2: 143–153.

Baden. 1984. Kew Bull. 39: 638.

Baden. 1995. F.S.A. 30,3,1: 3–5.

longistrobus (C.B. Clarke) Baden
(= *Macrorungia longistrobus* C.B. Clarke)

Shrub, 0,75–1,50 m high. Young parts and undersurface of leaves densely white hairy. Flowers in axillary spikes; bracts imbricate, margins hyaline. *Flowers brownish yellow; September and January to April.* Kloofs, wooded hillsides, steep mountainside or rocky slopes. *Raal 37.*

W S C N E

Monechma Hochst. (s. Afr.: 19 spp.) 8094010

Clarke. 1901. F.C. 5,1: 68–74.

Munday. 1995. F.S.A. 30,3,1: 50–60.

debile (Forssk.) Nees

(= *M. monechmoides* (S. Moore) Hutch.,

= *M. tetense* C.B. Clarke,

= *M. bracteatum* Hochst.)

Annual herb, up to 0,6 m high. Leaf blades narrowly lanceolate to ovate or elliptic, up to 110 mm long. Calyx lobes 5. Corolla 6–10 mm long. Mature capsule small, 5–8 mm long. Seeds round or elliptic, 3,0–3,5 mm in diameter. *Flowers mauve or white; September to June.* Open woodland, often near streams, disturbed places, weedy. *Codd 6623.*

W S C N E

divaricatum (Nees) C.B. Clarke

(= *M. fimbriatum* C.B. Clarke,

= *M. namaense* (Schinz) C.B. Clarke)

Perennial shrub, up to 1 m high. Leaves linear to narrowly spatulate to obovate; tip recurved with minute mucro. Calyx lobes 4, each lobe with median green stripe and pale or white margins. Corolla $\pm$ 12 mm long. *Flowers mauve or white marked purple; December to September.* Open woodland. *Van der Schijff 3576.*

W S C N E

incanum (Nees) C.B. Clarke

Shrub, up to 1 m high. Leaves and twigs with T-shaped hairs, silvery grey. Leaves thin, oblanceolate or elliptic or occasionally obovate. Flowers solitary, occasionally in pairs. Calyx lobes 5, each lobe without median green stripe and pale or white margins. Mature capsule 14

mm long. *Flowers white, often with purple veining; November to December and April.* Dry, rocky slopes, outcrops, sandy plains. *Germishuizen 3977.*

W S C N E

Neuracanthus Nees (s. Afr.: 1 sp.) 7977000

Clarke. 1899. F.T.A. 5: 137.

africanus S. Moore

(= *Barleria sacani* Klotzsch ex Lindau)

Small shrub, up to 500 mm tall. Bracts obovate, acuminate. Flowers in dense strobilate axillary spikes; with small white hairs. *Flowers white; January to April.* Stony/rocky soil or hillsides. *Van der Schijff 3307.*

W S C N E

Peristrophe Nees (s. Afr.: 11 spp.) 8026000

Balkwill. 1985. Ph. D. thesis, University of Natal, Pietermaritzburg.

Balkwill *et al.* 1985. S. Afr. J. Bot. 51,6: 485–488.

Getliffe Norris *et al.* 1985. S. Afr. J. Bot. 51,6: 489–490.

Balkwill *et al.* 1989. S. Afr. J. Bot. 55,2: 254–258.

cliffordii K. Balkwill

Perennial herb, up to 1 m high. Mature stem densely pubescent between ridges. Bracts glandular. Tertiary bracts 3–5 $\times$ 0,6–1,3 mm, with midrib only, length to breadth ratio less than 6 : 1, shorter than calyx lobes. Corolla longer than 14 mm. *Flowers purple, rarely pink or white; May and August to October.* Limpopo River valley in deep sands. *Bruce 132.*

W S C N E

decorticans K. Balkwill

(= *P. kotschyana* sensu K. Balkwill non Nees)

Perennial herb or shrub, up to 1 m high. Bark on older stems white, peeling; young stems with stiff eglandular hairs on ridges, glabrous between ridges. Leaves ovate, narrowly ovate or elliptic, scabrid and with eglandular hairs. Tertiary bracts (7,5–)9,3–12,9 (–17,0) $\times$ (0,6–)0,9–1,3 (–1,5) mm, longer than calyx lobes, strigose. *Flowers light purple, with purple honey guides; July to June.* Sandy thornveld. *Meeuse 9457.*

W S C N E

gillilandiorum K. Balkwill

Perennial herb, up to 0,8 m high. Leaves lanceolate, 3,3–6,0 mm broad. Tertiary bracts 5,3–9,2 $\times$ 1,0–1,2 mm, length to breadth ratio greater than 7 : 1, longer than calyx lobes. Corolla longer than 14 mm. Mature stems densely pubescent between ridges. *Flowers pale mauve with purple honey guides; August and March.* Limpopo river valley on rocky hillsides, sandstone hills and deep clay. *Bruce 58.*

W S C N E

transvaalensis (C.B. Clarke) K. Balkwill
(= *Dicliptera transvaalensis* C.B. Clarke)

Perennial herb, up to 300 mm tall. Leaves with grey-green indumentum of eglandular trichomes. Tertiary bracts narrower than 4 mm and longer than 14 mm, length to breadth ratio less than 6,2 : 1. Corolla longer than 14 mm. *Flowers mauve; January to June*. Hill-sides and undergrowth. *Meeuse 9644*.

W S C N E

Petalidium Nees (s. Afr.: 28 spp.) 7934000

Clarke. 1901. F.C. 5,1: 21–22.
Obermeyer. 1936. Ann. Transv. Mus. 18,2: 151–160.

aromaticum Oberm. var. **aromaticum**

Shrub, up to 0,75 m high. Leaves $\pm 30 \times 15$ mm, glandular pubescent. Flowers 1–5 together, axis culminating with same leafy bracts. Corolla ± 13 mm in diameter at throat, tube straight. *Flowers dark yellowish brown, lobes cream-coloured; July to June*. Sandveld. *Bruce 176*.

W S C N E

aromaticum Oberm. var. **canescens** Oberm.

Shrub, up to 0,75 m high. Young leaves densely, older ones sparsely covered with white, branched, spreading hairs. Flowers as in var. *aromaticum*. *Flowers dark yellowish brown, lobes cream-coloured; May to September and in February*. Sandveld. *Pienaar 1067*.

W S C N E

oblongifolium C.B. Clarke

Shrub, up to 0,6 m high. Leaves lanceolate to oblong-lanceolate. Flowers solitary, axillary. Bracteoles ovate, at first greenish or suffused with purple, afterwards yellowish; with darker veins; membranous. Corolla ± 25 mm long. Pedicels 3 mm long. *Flowers blue to mauve; January to August*. Sandy soil in valleys and against hillsides. *Codd & Dyer 7711*.

W S C N E

Phaulopsis Willd. (s. Afr.: 3 spp.) 7932000

Clarke. 1901. F.C. 5,1: 20–21.

imbricata (Forssk.) Sweet
(= *P. parviflora* Willd.)

Dwarf shrub, up to 0,6 m high. Leaves elliptic to ovate, base unequal. Inflorescence in dense cylindrical or ovoid spikes at nodes or terminal. Anticous 2 calyx teeth linear-ligulate, acute. *Flowers white or purplish; April to November*. Undergrowth in forest, forest margins, kloofs, on hillsides. *Scheepers 304*.

W S C N E

longifolia Thomson

Dwarf shrub, up to 0,6 m high. Leaves and inflorescence as in *P. imbricata*. Anticous 2 calyx teeth linear-

spathulate. *Flowers white or purplish; April*. Bushveld. *Balkwill 116*.

W S C N E

Rhinacanthus Nees (s. Afr.: 3 spp.) 8054000

Meeuse. 1960. Bothalia 7: 410–412.
Balkwill. 1995. F.S.A. 30,3,1: 13–14.

xerophilus A. Meeuse

Straggly herb, up to 350 mm tall. Leaves ovate-cordate to cordate, densely pubescent on lower surface. Corolla tube up to 25 mm long and 1,0–1,5 mm broad. *Flowers white marked with mauve in throat; July and October to April*. Open gravelly or rocky places in dry bushveld. *Meeuse 9188*.

W S C N E

Ruellia L. (s. Afr.: 13 spp.) 7965000

Clarke. 1901. F.C. 5,1: 11–15.
Meyer. 1956. Mitt. bot. StSamml., Münch. 2: 171–172.
Meyer. 1968. F.S.W.A. 130: 63–65.

cordata Thunb.

(= *R. ovata* C.B. Clarke p.p.)

Perennial decumbent to erect herb, up to 500 mm tall. Leaves ovate, base truncate or cordate, thinly hairy. Calyx obscurely 2-lipped, 2 nearly free to base, 3 connate for less than half their length. *Flowers pale mauve or white; May to February*. Grassland or open woodland, stony or sandy soil. *Codd & De Winter 4986*.

W S C N E

malacophylla C.B. Clarke

Perennial herb or dwarf shrub, up to 500 mm tall, densely and softly hairy. Leaves elliptic, narrowed into petiole. Calyx obscurely 2-lipped, 2 nearly free to base, 3 connate for less than half their length. Ovary and fruit hairy. *Flowers mauve; August to November*. Grassland. *Nel 357*.

W S C N E

otaviensis P.G. Mey.

(= *R. prostrata* non Poir.)

Perennial herb or dwarf shrub, up to 1,5 m high. Leaves ovate or elliptic, 40–95 mm long, acuminate, shortly to distinctly petiolate. Bracteoles linear. Calyx equally 5-fid, divided nearly to base. Fruit hairy, many-seeded. *Flowers mauve; October to February*. Shrubland. *Van der Schijff 4068*.

W S C N E

patula Jacq.

Prostrate or erect dwarf shrub, up to 500 mm tall. Leaves 12–40 mm long, ovate or elliptic, apex obtusely triangular. Bracteoles spathulate-elliptic. Calyx equally 5-fid, divided nearly to base. *Flowers white or mauve; October to May*. Grassland or bushveld. *Codd 5019*.

W S C N E

stenophylla C.B. Clarke

Perennial herb, up to 500 mm tall, softly hairy. Leaves linear-oblong. Calyx obscurely 2-lipped, 2 nearly free to base, 3 connate at base. *Flowers pale mauve; August to December.* Rocky or mountain grassland. *Devenish 1460.*

W S C N E

Ruelliopsis C.B. Clarke (s. Afr.: 2 spp.) 7946000

Clarke. 1899. F.T.A. 5: 59.

setosa (Nees) C.B. Clarke

(= *Calophanes setosus* Nees)

Trailing perennial herb, hispid with long scattered white hairs. Leaves obtuse, ± 65 mm long. Corolla ± 30 mm long. Seeds 8, silky white. *Flowers bright or pale blue; October to May.* Sandy soil. *Meeuse 9450.*

W S C N E

Ruspolia Lindau (s. Afr.: 3 spp.) 8022000

Milne-Redhead. 1936. Kew Bull.: 268.

Bruce. 1954–55. Flower. Pl. Afr. 30: t. 1166.

hypocrateriformis (Vahl) Milne-Redh. var. **australis**

Milne-Redh.

Scandent to erect shrub, 1.2–1.5 m high. Capsule ± 40 mm long, normally 4-seeded; seeds round in outline with thick, wide marginal rim, inner surface smooth; transversely 7 mm in diameter. *Flowers scarlet; December to June.* Hot, dry, bush-covered hillsides. *Meeuse 9112.*

W S C N E

Ruttya Harv. (s. Afr.: 1 sp.) 8063000

Clarke. 1901. F.C. 5,1: 55.

ovata Harv.

Shrub, up to 2 m high. Leaves ovate, petiolate; petioles disarticulate at base leaving small wooden cup-like scars on branches. Inflorescence a dense cylindrical spike. Bracts and bracteoles linear. Sepals caudate. *Flowers white; July and November to April.* Woodland and bushland, often riverine bush. *Clarke 24.*

W S C N E

× Ruttyruspolia A. Meeuse & De Wet (s. Afr.: 1 sp.) 8063010

Obermeyer. 1971. Flower. Pl. Afr. 41: t. 1622.

'phyllis van heerden' A. Meeuse & De Wet

Shrub, 1.5 m high. Inflorescence consisting of a number of contracted cymes in upper axils. Bracts small, linear, 10–12 mm long, ciliate. Calyx 5-lobed, divided to base, up to 10 mm long. Corolla salverform, tube 17 mm long,

lobes somewhat bilabiate. *Flowers pink; January to March.* Rocky slopes. *Meeuse 9793.*

W S C N E

Sclerochiton Harv. (s. Afr.: 6 spp.) 7978000

Vollesen. 1991. Kew Bull. 46,1: 7–29.

harveyanus Nees

Shrub, up to 3 m high. Leaves densely ciliate along both sides of midrib; margin entire or irregularly and grossly dentate. Flowers solitary in axils of ordinary leaves, not scented. Bracteoles 4–6 mm long; sepals 6.0–9.5 mm long, subequal; bracteoles and sepals with scarious margin. *Flowers blue, mauve, lilac or purple; December to June.* Shrub layer of evergreen montane and submontane forest, gallery forest. *Codd 9425.*

W S C N E

ilicifolius A. Meeuse

Straggly shrub, 2–(3) m high. Leaves stiff and leathery with 1–4–(6) large triangular teeth per side. Flowers in spike-like racemes, in axils of bracts markedly different from ordinary leaves. Bracts and bracteoles 15–25 mm long, they and sepals with pungent mucronate apex and long-stalked capitate glands. *Flowers white to cream or very pale mauve in throat; October and January to May.* Quartzite outcrops; rocky slopes and rocky outcrops. *De Winter 7804.*

W S C N E

sp. A

Shrub, up to 1 m high. Leaves up to 15 mm long; with pungent mucronate apex; margin entire or some finely denticulate. Flowers in spike-like racemes, in axils of bracts different from ordinary leaves. Rhachis finely puberulous. Bracts and bracteoles ± 8 mm long. Bracts, bracteoles and sepals with pungent mucronate apex. Dorsal sepal ± 10 mm long, ventral ± 9 mm and lateral ± 8 mm long. Corolla limb ± 11 mm long, tube with band of upwardly directed hairs. *Flowers with blue limb and darker veins, November.* Humus-rich soil in riverine thicket. *Theron 1932.*

W S C N E

triacanthus A. Meeuse

Straggly low shrub, up to 1 m high. Leaves subcoriaceous, entire or some with 1 or 2 fine teeth per side. Flowers in spike-like racemes, in axils of bracts markedly different from ordinary leaves. Bracts and bracteoles 12–18 mm long, they and sepals with pungent mucronate apex. *Flowers bright blue with darker veins; December to January and in June.* Bushland on shallow soil on shale outcrops and rocky slopes. *Nel 164.*

W S C N E

Siphonoglossa Oerst. (s. Afr.: 3 spp.) 8049000

Immelman. 1989. Bothalia 19: 209–210.

Immelman. 1995. F.S.A. 30,3,1: 9–10.

linifolia (Lindau) C.B. Clarke
(= *Aulojusticia linifolia* Lindau)

Woody shrublet, 200–400 mm tall. Leaves linear to narrowly lanceolate, 25–38 × 2–6 mm, sessile. Corolla (35–)40–58 mm long. *Flowers pale to bright mauve-pink, rarely white; January to April.* Rocky grassland. Retief 2129.

W S C N E

Thunbergia Retz. (s. Afr.: 11 spp.) 7914000

Retief & Reyneke. 1984. *Bothalia* 15: 107–116.

alata Sims

Herb, creeper. Petioles winged. Fruit densely pubescent; seeds with trichomes adhering in wing-like protuberances. *Flowers orange, inner surface of tube purplish black; November to May.* Forest margins, sandy soil. Raal 1153.

W S C N E

amoena C.B. Clarke

Herb, creeper. Leaves densely pubescent, bases cordate, petiolate, petioles not winged. Fruit glabrous or sparsely pubescent. *Flowers lemon-yellow, inside of tube dull yellow; October to May.* Margins of forest, pine plantations and rocky slopes. Meeuse 9771.

W S C N E

atriplicifolia E. Mey. ex Nees

(= *T. bachmannii* Lindau,
= *T. xanthotricha* Lindau)

Erect to twining small shrub, 250–400 mm tall. Stigma 2-lobed. Leaf blade ovate to broadly ovate. *Flowers dull white, inside of tube dull yellow; September to June.* Grassland. Meeuse 9407.

W S C N E

aurea N.E. Br.

Perennial erect or trailing herb. Petioles winged. Fruit densely pubescent, seeds with trichomes adhering in papillae-like protuberances. *Flowers dull orange-yellow, inner surface of tube dull white; February and May.* Sandy soil under trees and shrubs or on slopes of dolomite hills. Zwanziger 686.

W S C N E

natalensis Hook.

Dwarf shrub, 0,75–1,00 m high. Stigma funnel-shaped; spurs of anthers curved. *Flowers with lobes light blue to purplish blue, tube inside yellow to white with purplish blue to light blue stripes running from lobes, outside light blue to purplish blue; October to March.* In shade along margins of forest, woodland and pine plantations. Codd & De Winter 3081.

W S C N E

neglecta Sond.

Scrambler. Leaf base cordate, petiolate, petioles not winged. Fruit glabrous or sparsely pubescent. *Flowers dull white, inner surface of tube dull yellow; September to April.* Woodland, thornveld and grassland. Van der Schijff 1222.

W S C N E

pondoensis Lindau

Creeper/twiner. Leaf base hastate, petiolate, petioles not winged. Fruit glabrous or sparsely pubescent. *Flowers white, inside of tube orange-yellow; November to March.* Undergrowth under trees in woodland. Onderstall 299.

W S C N E

ACHARIACEAE

Herbaceous climber, with or without tendrils; monoecious. Leaves alternate, usually palmately 5–7-lobed with lobes acuminate and serrate. Flowers solitary or racemose. Sepals 4 or 5 (male flower) or calyx rudimentary. Petals 4- or 5-lobed, fused, lobes ciliate, tube campanulate with glands at base. Stamens 3–5, filaments inserted at base or in throat of corolla tube. Ovary superior, 1-locular; several ovules on 4 or 5 parietal placentas; style 3–5-lobed. Fruit a capsule, enclosed in persistent corolla.

Ceratosicyos Nees (s. Afr.: 1 sp.) 5374000

Killick. 1976. *F.S.A.* 22: 128–130.

laevis (Thunb.) A. Meeuse

Herbaceous climber. Leaf blade palmately 5–7-lobed, lobes acuminate, margins serrate. Fruit an elongated

ribbed capsule up to 80 mm long, several-seeded. *Flowers yellowish green; February to March.* Forest climber. Retief 1271.

W S C N E

AIZOACEAE

Herbs. Leaves alternate, opposite or whorled, with or without stipules. Flowers small, regular. Sepals with 4 or 5 lobes, $\pm$ persistent. Petals absent or small. Stamens 4–15, usually free. Ovary inferior or superior; styles often 2 or more, free. Fruit a capsule.

Key after Dyer, Gen. 1: 78–79 (1975).

- 1a Ovules basal, solitary in each carpel 2
- 1b Ovules not basal. 4
- 2a Leaves narrow, in whorls, usually with stipules *Psammotropha*
- 2b Leaves sometimes narrow and sometimes in false whorls, without stipules 3
- 3a Fruit of 2 united carpels, indehiscent; inflorescence dense *Limeum*
- 3b Fruit of 2–5 free carpels, indehiscent compressed, membranous; inflorescence dense or lax *Gisekia*
- 4a Ovules many in each carpel, with axile placentation 5
- 4b Ovules 1 or 2 (few) in each carpel, mainly pendulous; with somewhat fleshy leaves and flowers solitary 12
- 5a Fruit a circumscissile capsule; leaves succulent, without stipules *Sesuvium*
- 5b Fruit mostly loculicidally dehiscent, not circumscissile 6
- 6a Leaves without stipules 7
- 6b Leaves with stipules 9
- 7a Seeds without caruncle *Mollugo*
- 7b Seeds with caruncle (fleshy appendage) 8
- 8a Seeds on long funicle; staminodes small, free, sometimes absent *Glinus*
- 8b Seeds on short funicle; staminodes many, united at base *Corbichonia*
- 9a Inflorescence a compound cyme 10
- 9b Inflorescence a simple umbel; stipules entire 11
- 10a Stipules entire, often caducous *Mollugo*
- 10b Stipules lacerate, persistent; flowers sometimes with nectariferous disc *Pharnaceum*
- 11a Leaves not fleshy; stipules small, caducous, free from leaf base; flowers small *Mollugo*
- 11b Leaves fleshy; stipules persistent, attached to leaf base; flowers conspicuous *Hypertelis*
- 12a Ovules parietal or on an interocular septum 13
- 12b Ovules pendulous, usually solitary 14
- 13a Ovary 1-locular; ovules parietal; leaves mostly succulent with membranous expansion at base *Trianthema*
- 13b Ovary 2-locular; ovules on an interocular septum; leaves subsucculent, petiolate *Zaleya*
- 14a Ovules 2 to many in each carpel or loculus; carpels mostly 5; filaments filiform; fruit valves not hygroscopic, not spreading ... *Aizoon*
- 14b Ovules solitary in carpels 15
- 15a Silky, densely leafy shrublet, stamens 4 or 5 arising from calyx tube *Plinthus*
- 15b Glabrous, hairy, papillose or farinose herb or undershrub *Galenia*

Aizoon L. (s. Afr.: 11 spp.)

2401000

Adamson. 1958. JI S. Afr. Bot. 25: 29–44.
Gonçalves. 1978. F.Z. 4: 509.

canariense L.

A prostrate, often rather thick and many-stemmed annual or perennial herb. Leaves alternate. Lamina, 8–70 $\times$ 4–45 mm, suborbicular to oblanceolate-obovate, usually rounded at apex. Flowers solitary in leaf axils. Fruit 5–9 mm in diameter. *Perianth yellowish inside, greenish or reddish and pilose outside*. Roadsides, cultivated ground, rocky soils. *Bredenkamp 473*.

W S C N E

Corbichonia Scop. (s. Afr.: 2 spp.)

2393000

Adamson. 1958. JI S. Afr. Bot. 24: 67–69.

decumbens (Forssk.) Exell

(= *Orygia decumbens* Forssk.)

Prostrate herb with stems up to 450 mm long. Stems glabrous, glaucous. Leaves obovate to orbicular. Fruit a capsule, almost spherical, $\pm$ as long as perianth. Seeds brown with white aril. *Flowers pink to pale purple; January to May*. Disturbed places, margins of pans, rocky places. *Schlieben 9220*.

W S C N E

Galenia L. (s. Afr.: 28 spp.)

2399000

Adamson. 1956. JI S. Afr. Bot. 22: 87–127.

prostrata G. Schellenb.

Slender, prostrate, greyish green herb in circular patches 0.5–0.8 m across. Leaves rhombic-spathulate.

Perianth produced into a cylindrical point. Perianth segments 4 or 5. Styles 4. *Flowers mauve; February.* Old cultivated lands. *Zambatis* 660.

W S C N E

pubescens (Eckl. & Zeyh.) Druce var. **pubescens**

Prostrate, green or greyish green, glabrescent herb in patches 1 m or more across. Leaves papulose, alternate, spatulate. Flowers on second branches. Perianth hairy, 5. Styles 5. *Flowering February.* Riverbanks. *Burt Davy* 1495.

W S C N E

Gisekia L. (s. Afr.: 2 spp.)

2382000

Adamson. 1961. JI S. Afr. Bot. 27: 131–136.

africana (Lour.) Kuntze var. **africana**

(= *G. pentadecandra* Moq.)

Slender, semi-erect, annual herb. Stamens 10–15. Pedicels lengthening at anthesis. Flowers opening in succession. Perianth 2 or 3 mm long. *Flowers pink to red; November to June.* Bushveld, sandy soil. *Germishuizen* 3664.

W S C N E

africana (Lour.) Kuntze var. **cymosa** Adamson

Slender, semi-erect, annual herb. Inflorescences few-flowered heads, not dense umbels. Pedicels lengthening at anthesis. Flowers opening in succession. Perianth 3–5 mm long. Stamens 10–15. *Flowers pink or white; October to June.* Grassland, riverbanks, sandy soil. *Van der Schijff* 2201.

W S C N E

pharnacioides L. var. **pharnacioides**

Prostrate herb. Flowers on equal pedicels not extending at anthesis, opening together. Stamens 5. *Flowers white or yellow; September to April.* Woodland, sandy soil. *Codd & De Winter* 4913.

W S C N E

Glinus L. (s. Afr.: 3 spp.)

2388000

Gonçalves. 1978. F.Z. 4: 537–541.

bainesii (Oliv.) Pax

Many-stemmed, semi-decumbent herb, hairy when young, glabrescent with age. Stems up to 400 mm long. Leaves oblanceolate, with short petioles. Stamens 20–30. Aril less than a third the length of the seed. *Flowers white; September to May.* Bushveld, margins of pans. *Van der Schijff* 2952.

W S C N E

lotoides L. var. **lotoides**

Dense, hairy, grey, prostrate herb with stems 150–500 mm long. Leaves broadly obovate to subrotund with

petioles as long as blade. Stamens 10–20. Aril half as long as seed. *Flowers white; November to May.* Dam floor. *Straub* 193.

W S C N E

oppositifolius (L.) DC. var. **oppositifolius**

(= *Mollugo serrulata* Sond.)

Prostrate glabrous herb. Leaves lanceolate or narrow-oblong. Flowers 3–5 mm long, pedicellate. Stamens 3–10. *Flowers white; March to May.* Grassland, flood-bed of rivers. *Germishuizen* 1341.

W S C N E

Hypertelis E. Mey. ex Fenzl (s. Afr.: 7 spp.)

2390000

Adamson. 1958. JI S. Afr. Bot. 24: 51–59.

bowkeriana Sond.

(= *Mollugo suffruticosa* A. Peter)

Erect herb, up to 150 mm tall. Leaves crowded, linear. Stipules persistent. Peduncles, pedicels and perianth smooth. Stamens 5. *Flowers white; December to April.* Bushveld, brakish soil. *Codd & De Winter* 5021.

W S C N E

salsoloides (Burch.) Adamson var. **salsoloides**

(= *H. verrucosa* Fenzl,
= *Pharnaceum salsoloides* Burch.)

Perennial herb, up to 150 mm tall. Leaves crowded, linear. Peduncles, pedicels and perianth with projecting glandular warts. Stipules persistent. Stamens 12–15. *Flowers white or pink; August to May.* Grassland, margins of salt pans. *Meeuse* 10303.

W S C N E

Limeum L. (s. Afr.: 17 spp.)

2376000

Friedrich. 1956. Mitt. bot. StSamml. Münch. 2: 133–160.

argute-carinatum Wawra & Peyr. var. **argute-carinatum**

Prostrate, annual herb. Axillary inflorescences sessile or with short peduncles, densely flowered. Seeds dark brown to black when ripe, surface irregularly net-honeycombed or shortly angled. *Flowers white; January.* Calcrete ridges. *Van Wyk* 1441.

W S C N E

dinteri G. Schellenb.

Prostrate to erect herb, up to 400 mm tall, glandular tomentose. Leaves obovate, 20–30 × 10 mm. Fruits reniform, hemispherical, base with 2 ± distinct ears, 3.5–4.0 mm in diameter. *Flowers white; January to April.* Bushveld. *Meeuse* 10195.

W S C N E

fenestratum (Fenzl) Heimerl var. **fenestratum**
(= *Semovillea fenestrata* Fenzl)

Slender, erect, annual herb, up to 400 mm tall. Leaves linear to linear-lanceolate. Inflorescence laxly branched. Fruit with broad circular wing, membranous and transparent. *Flowers white; October to March.* Bushveld, woodland, grassland, disturbed places, sandy soil. *Meeuse & Strey 10425.*

W S C N E

fenestratum (Fenzl) Heimerl var. **exalatum** Friedrich

Similar to var. *fenestratum* but with mericarps wingless. *Flowers white; January to February.* Open woodland, weed of cultivated land. *Wedermann & Oberdieck 7924.*

W S C N E

myosotis H. Walter var. **confusum** Friedrich
(= *L. pseudomyosotis* G. Schellenb.)

Annual, decumbent herb, up to 150 mm tall, sticky, glandular hairy. Leaves obovate to broadly elliptic, narrowed at base. Fruit honeycombed and usually short tubercled. *Flowers white; December.* Disturbed places. *Zambatis 1324.*

W S C N E

pauciflorum Moq.

Erect or prostrate, perennial herb. Leaves up to 12 mm long, obovate with wavy edges. Inflorescence 3–5-flowered. Flowers sessile or shortly stalked. *Flowers green; January.* Grassland, rocky sheets, sandy soil. *Kluge 2356.*

W S C N E

pterocarpum (J. Gay) Heimerl var. **pterocarpum**
(= *L. neglectum* Dinter)

Erect, annual herb, up to 300 mm tall. Leaves lanceolate. Flowers crowded in false umbel (cyme). Fruit with broad, circular, light brown, usually opaque wing. *Flowers white; November to April.* Grassland. *Mogg 37116.*

W S C N E

pterocarpum (J. Gay) Heimerl var. **apterum** Friedrich

Erect, annual herb, up to 300 mm tall. Leaves lanceolate. Flowers crowded in false umbel (cyme). Fruit without wing. *Flowers white; November to April.* Grassland. *Schlechter 4583.*

W S C N E

sulcatum (Klotzsch) Hutch. var. **sulcatum**

Erect or prostrate herb, up to 150 mm tall. Leaves linear-lanceolate. Inflorescences few or many-flowered (10–30 flowers). Fruits prickly over surface, with 2 smooth ears at base. *Flowers white; November to December.* Disturbed places, sandy soil. *Vahrmeijer 1303.*

W S C N E

sulcatum (Klotzsch) Hutch. var. **robustum** Friedrich

Robust prostrate annual herb. Inflorescences, especially the lowermost, richly flowered (50–100 flowers)

and more strongly branched. *Flowers white; June.* Riverbeds. *Van der Schijff 544.*

W S C N E

sulcatum (Klotzsch) Hutch. var. **scabridum** (Klotzsch) Friedrich

Prostrate herb. Stems ± woody, scabrid. Leaves linear-lanceolate or lanceolate (up to 5 mm broad). Fruits prickly over surface with 2 smooth ears at base. *Flowers green; January to March.* Disturbed places. *Smith 6242.*

W S C N E

viscosum (J. Gay) Fenzl subsp. **viscosum** var. **viscosum**

Prostrate viscid herb with stems up to 1 m long. Leaves petiolate, 10–20 mm long, round to elliptic, 2.5 times as long as broad. Pedicels 2.0–3.5 mm long. Stamminodes absent. Fruits 2 or 3 mm in diameter. *Flowers white; December to May.* Sandy places between rocks in grassland. *Jacobsen 2093.*

W S C N E

viscosum (J. Gay) Fenzl subsp. **viscosum** var. **dubium** Friedrich

Prostrate herb. Leaves obovate-roundish to obovate-elliptic, at the most 2.5 times as long as broad. Flower stalks 6 or 7 mm long. *Flowers white; December to February.* Bushveld, disturbed places, sandy soil. *Obermeyer 153.*

W S C N E

viscosum (J. Gay) Fenzl subsp. **viscosum** var. **glomeratum** (Eckl. & Zeyh.) Friedrich

(= *L. glomeratum* Eckl. & Zeyh.,
= *L. viscosum* Sond. var. *kotschyi* Burt Davy)

Prostrate, annual herb. Leaves lanceolate to narrowly obovate. Flowers sessile. Surface of fruits net-depressed. *Flowers white; January to April.* Grassland, disturbed places. *Germishuizen 2884.*

W S C N E

viscosum (J. Gay) Fenzl subsp. **viscosum** var. **kraussii** Friedrich

(= *L. natalense* G. Schellenb.)

Prostrate herb. Leaves lanceolate to oblanceolate-cone-shaped, 3–5 times as long as broad. Flower stalks ± 10–20 mm long. Stamens always 7. *Flowers white; November to April.* Disturbed places. *Strey 3099.*

W S C N E

viscosum (J. Gay) Fenzl subsp. **transvaalense** Friedrich

Prostrate herb. Stamminodes present and conspicuous. Surface of fruit net-like honeycombed and ± short-pointed. *Flowers white; January to February.* Grassland. *Barker 819.*

W S C N E

Mollugo L. (s. Afr.: 6 spp.)

Adamson. 1958. *Jl S. Afr. Bot.* 24: 13–15.

2387000

cerviana (L.) Ser. ex DC.

Many-stemmed. annual herb, up to 200 mm tall. Basal leaves evanescent, cauline leaves linear, in several whorls. Inflorescence terminal and axillary. Pedicels longer than leaves. *Flowers white; November to April.* Rocky ridges, cultivated land, roadsides. *Comins 923.*

W	S	C	N	E
---	---	---	---	---

nudicaulis Lam.*

Annual herb, up to 200 mm tall. Basal leaves persistent, cauline leaves wanting; leaves obovate, sessile, longer than 30 mm. Flowering branches erect, 1-flowered. *Flowers greenish white; December to April.* Woodland, riverbanks. Native of the Indian Ocean Islands. *Theron 1062.*

W	S	C	N	E
---	---	---	---	---

Pharnaceum L. (s. Afr.: 25 spp.) 2389000

Adamson. 1958. JI S. Afr. Bot. 24: 40.

brevicaule (DC.) Bartl.

Low-growing herb with stems less than 50 mm above ground. Leaves crowded, linear-revolute. Stipules large, persistent after leaf-fall, covering stem or surrounding older leaves. Perianth with broad, white margin. *Flowering December to February.* Grassland, rocky places. *Acocks & Hafström 431.*

W	S	C	N	E
---	---	---	---	---

Plinthus Fenzl (s. Afr.: 4 spp.) 2398000

Adamson. 1961. JI S. Afr. Bot. 27: 147–151.

karooicus I. Verd.

Many-stemmed dwarf shrub, up to 300 mm tall, woody at base, usually much-branched, with branches erect or sprawling. Leaves opposite, rolled, ericoid, linear or linear-lanceolate. *Flowers 4-merous, in numerous adjacent groups of 2 or 3, yellow; September.* Sandy soil. *Gubb 244/32.*

W	S	C	N	E
---	---	---	---	---

rehmannii G. Schellenb.

Decumbent sprawling or less often erect herb with shoots 150–600 mm long. Leaves alternate, widest near tip, distinctly petiolate. Flowers 5-merous, in groups of 2 or 3. *Flowers yellowish white; April.* Rocky hillsides. *Pole-Evans 4798.*

W	S	C	N	E
---	---	---	---	---

sericeus Pax

(= *P. laxifolius* I. Verd.)

Erect or sprawling white or silvery grey shrublet up to 1 m high. Leaves alternate, oblong lanceolate, narrowed at both ends. Perianth segments hairy outside. *Flowers white; March.* Grassland. *Ferguson 90.*

W	S	C	N	E
---	---	---	---	---

Psammotropha Eckl. & Zeyh. (s. Afr.:

12 spp.)

2379000

Adamson. 1959. JI S. Afr. Bot. 25: 51–66.

mucronata (Thunb.) Fenzl var. **mucronata**

(= *P. androsacea* Fenzl,

= *Pharnaceum mucronatum* Thunb.)

Short-stemmed herb with basal leaves in compact cushions. Leaves 5–10 mm long, thin, usually colourless at base. Inflorescence with a few leaves, 30–250 mm tall. *Flowers yellowish green; September to April.* Grassland. *Burt Davy 5355.*

W	S	C	N	E
---	---	---	---	---

mucronata (Thunb.) Fenzl var. **foliosa** Adamson

Short-stemmed herb with basal leaves in lax cushions. Leaves opaque, 20–30 mm long. Inflorescence 30–250 mm tall, with 2–8 nodes without flowers. *Flowers green; November to April.* Grassland. *Smith 1747.*

W	S	C	N	E
---	---	---	---	---

mucronata (Thunb.) Fenzl var. **marginata** Adamson

Perennial herb. Stems not thicker at top. Leaf tufts not depressed in centre; leaves erect, aristate, 10–20 mm long, with thickened border, linear-oblong. Inflorescence with few or no nodes without flowers. Bracts mucronate. *Flowers greenish; January.* Edge of pan. *Louw 977.*

W	S	C	N	E
---	---	---	---	---

myriantha Sond.

(= *P. breviscapa* Burt Davy)

Herb with basal leaves in single or in multiple tufts or small cushions. Leaves linear, not narrowed to base, midrib projecting. Leaf tufts depressed in centre. Inflorescences 30–300 mm tall. *Flowers yellowish green; September to March.* Grassland. *Kluge 1997.*

W	S	C	N	E
---	---	---	---	---

Sesuvium L. (s. Afr.: 4 spp.)

2394000

Adamson. 1962. JI S. Afr. Bot. 28: 244–246.

sesuvioides (Fenzl) Verdc. var. **sesuvioides**

Succulent, prostrate herb with stems up to 500 mm long. Flowers sessile or nearly so. Perianth segments united for ± a third of their length, lobes acute with mucro. *Flowers mauve pink; December to March.* Grassland, edge of salt pan, margin of dam. *Repton 5248.*

W	S	C	N	E
---	---	---	---	---

Trianthema L. (s. Afr.: 3 spp.)

2395000

Adamson. 1962. JI S. Afr. Bot. 28: 247–249.

portulacastrum L.

Prostrate completely glabrous herb. Flowers solitary, ± hidden by sheathing leaf bases. Calyx tube adnate

topetiole. Flowers yellowish green with pink; January to March. Weed in cultivated land. Kluge 2350.

W S C N E

salsoloides Fenzl ex Oliv. var. **stenophylla** Adamson

Slender, erect herb or stems prostrate. Stems smooth. Leaves linear. Perianth lobes with broad membranous margins. Flowers purple; January to May. Edge of pans, brackish soil. Van der Schijff & Marais 3734.

W S C N E

salsoloides Fenzl ex Oliv. var. **transvaalensis** (Schinz)

Adamson
(= *T. transvaalensis* Schinz)

Herb with prostrate or ascending stems. Stems hispid. Leaves lanceolate. Perianth lobes much longer than tube, lobes with narrow margin and long mucro. Flowers glomerulate. Flowers greenish white; November to March. Bushveld. Codd 4862.

W S C N E

triquetra Rottler ex Willd.

Prostrate, succulent herb. Leaf blade linear to narrowly obovate-lanceolate, 5–20 mm long. Perianth lobes shorter than tube, obtuse or subobtuse. Flowers glomerulate. Flowers white to pink; December to January. Bushveld, edge of salt pan. Meeuse 10583.

W S C N E

Zaleya Burm. f. (s. Afr.: 1 sp.)

2395010

Gonçalves. 1978. F.Z. 4: 520–521.

pentandra (L.) Jeffrey

(= *Trianthema pentandra* L.)

Prostrate herb. Leaves opposite, blades elliptical or oblong, 15–30 mm long, apex obtuse, petioles 4–8 mm long with narrow entire sheath at base. Flowers axillary in groups. Flowers pink or greenish red; December to June. Disturbed places. Prinsloo 68.

W S C N E

AMARANTHACEAE

Herbs. Leaves alternate or opposite, without stipules. Flowers very small, regular, in spike- or head-like inflorescences, usually surrounded by dry, chaffy often spinescent bracts. Sepals 5, free, ± dry and membranous. Petals absent. Stamens 5, opposite sepals; filaments united at base into short tube. Ovary superior, 1-locular. Fruit dry, 1-seeded, often opening by means of a lid. Seeds usually shiny.

Key after Dyer, Gen. 1: 65–66 (1975).

- 1a Anthers 1-theous, plants mostly prostrate or decumbent and diffusely branched 2
- 1b Anthers 2-theous 4
- 2a Stamens perigynous **Guilleminia**
- 2b Stamens hypogynous 3
- 3a Stigma capitate; flower clusters sessile in axils of leaves **Alternanthera**
- 3b Stigmas 2 or 3; flowers in dense spikes or terminal, sessile heads **Gomphrena**
- 4a Stigmas 2–5 or style bifid; style long, short or obsolete 5
- 4b Stigmas capitate; style long, short or obsolete 10
- 5a Ovary with 2 or more ovules 6
- 5b Ovary with 1 ovule 7
- 6a Ovules 2 or few on elongated, basal funicles; staminodes minute or absent **Celosia**
- 6b Ovules numerous, erect; staminodes present **Hermbstaedtia**
- 7a Stigmas 2 or 3; staminodes absent; leaves alternate; inflorescence glabrous; ovule erect on short funicle **Amaranthus**
- 7b Styles bifid; staminodes present or absent; leaves usually opposite; inflorescence with pubescence or wool present 8
- 8a Inflorescence pubescent; leaves opposite; staminodes absent **Psilotrichum**
- 8b Inflorescence with wool 9
- 9a Leaves opposite; staminodes present or absent; sterile flowers spinescent **Centema**
- 9b Leaves alternate, rarely opposite; perianth not spinescent **Aerva**
- 10a (4) Ovary with horn near apex; staminodes present; leaves opposite **Kyphocarpa**
- 10b Ovary without horn near apex 11
- 11a Sterile flowers reduced to hooked spines 12
- 11b Sterile flowers not reduced to hooked spines or rarely so 13
- 12a Stamines present; inflorescence pubescent **Cyathula**
- 12b Stamines absent; inflorescence with wool **Pupalia**
- 13a Inflorescence with dense woolly hairs 14
- 13b Inflorescence with little or no wool, sometimes densely villous 15

- 14a Leaves opposite; staminodes present or absent Centema
 14b Leaves alternate or occasionally opposite; staminodes present Aerva
 15a Staminodes absent 16
 15b Staminodes present, very rarely absent 17
 16a Hairs smooth; ovary villous or glabrous Sericorema
 16b Hairs of inflorescence minutely scabrid; shrublets of light colour Leucosphaera
 17a Mature flowers deflexed; perianth segments becoming hard and pungent Achyranthes
 17b Mature flowers ascending or spreading horizontally; inflorescences axillary and terminal, pedunculate Achyropsis

Achyranthes L. (s. Afr.: 1 sp.)

2328000

Suessenguth. 1966. F.S.W.A. 33: 4.

Townsend. 1988. F.Z. 9,1: 105–109.

aspera L. var. aspera*(= *A. robusta* C.H. Wright)

Herbaceous shrublet, up to 1 m high. Inflorescence a spike, up to 445 mm long, lower flowers reclined. Flowers 5–7 mm long. Secondary veins on undersurface prominent. *Flowers brownish green to dull yellow; January to July*. Grassland, bush clumps, riverbanks, hillsides. Native to India. *Scheepers 1443*.

W S C N E

aspera L. var. sicula L.*(= *A. argentea* Lam.,= *A. sicula* (L.) All.)

Slender herb, up to 500 mm tall. Leaves discolorous, undersurface whitish tomentose. Inflorescence a spike, up to 240 mm, lower flowers reclined. Flowers 2.5–3.0 mm long. *Flowers greenish white; December to May*. Bush clumps, hillsides, waste places. Native to Mediterranean region. *Van Hoepen 1646*.

W S C N E

Achyropsis (Moq.) Hook. f. (s. Afr.:

2 spp.)

2328020

Cooke & Wright. 1912. F.C. 5: 430.

Townsend. 1988. F.Z. 9,1: 110–115.

leptostachya (E. Mey. ex Meisn.) Baker & C.B. Clarke(= *Achyranthes leptostachya* E. Mey. ex Meisn.)

Erect, branched herb, up to 0.6 m high. Leaves opposite or fascicled, whitish villous beneath. Inflorescence a spike. Flowers 4-merous, staminodes not fringed. Utricle subglobose. *Flowers greenish white; September to May*. Streambanks, shady places. *Venter 1987*.

W S C N E

Aerva Forssk. (s. Afr.: 3 spp.)

2317000

Cooke & Wright. 1912. F.C. 5: 426–427.

Schinz. 1934. Natürl. PflFam. 16C: 50–52.

Townsend. 1988. F.Z. 9,1: 93–97.

lanata (L.) Juss. ex Schult.(= *Achyranthes lanata* L.)

Soft, straggling herb, up to 400 mm tall. Inflorescences dense, woolly, axillary heads or spikes. *Flowers white;*

September to April. Along rivers, edges of pans. *Codd 4131*.

W S C N E

leucura Moq.

Robust herb, up to 1 m high. Inflorescences spikes running into terminal leafless panicles. *Flowers white; November to May*. Bushveld and grassland. *Kruger 331*.

W S C N E

Alternanthera Forssk. (s. Afr.: 4 spp.)

2335000

Burr. Davy. 1926. Fl. Transv.: 184.

Schinz. 1934. Natürl. PflFam. 16C: 72.

Suessenguth. 1966. F.S.W.A. 33: 6.

Townsend. 1988. F.Z. 9,1: 124–130.

caracasana Humb., Bonpl. & Kunth*

Prostrate herb. Leaves obovate to elliptic. Inflorescence a dense axillary spike. Perianth segments 3 mm long, ending in sharp point but not so pungent as in *A. pungens*. *Flowers white; July to June*. On fully exposed ground and ruderal places. Native of tropical America. *Connell sub PRE 53588*.

W S C N E

nodiflora R. Br.*(= *A. sessilis* L. var. *nodiflora* Kuntze)

Prostrate or erect hydrophytic herb, up to 150 mm tall. Leaves lanceolate. Flower bracts 4 mm long, acuminate, longer than fruit. *Flowers white; July to June*. Margins of pans and dams. Native to Australia. *Codd 4132*.

W S C N E

pungens Humb., Bonpl. & Kunth*(= *Achyranthes repens* L.,= *A. achyrantha* R. Br.)

Prostrate, perennial herb. Leaves elliptic to obovate, base cuneate to oblique. Inflorescence a dense axillary spike. Perianth segments 5 mm long, pungent. *Flowers white; July to June*. On fully exposed ground and ruderal places. Native to tropical America. *Theron 2088*.

W S C N E

sessilis (L.) DC.(= *Gomphrena sessilis* (L.) DC.)

Prostrate, scandent or erect hydrophytic herb, up to 0.6 m high. Leaves lanceolate. Perianth segments 2.0–2.5 mm long, acute, shorter than fruit. *Flowers white; July*

to June. Vleis, margins of pans, dams, along rivers. *Van der Schijff 637*.

W S C N E

Amaranthus L. (s. Afr.: 17 spp.) 2299000

Brenan. 1981. J. S. Afr. Bot. 47: 451–492.

Townsend. 1988. F.Z. 9,1: 45–60.

deflexus L.*

Numerous, annual, herbaceous stems from rootstock up to 400 mm tall. Inflorescence a terminal branched or spike-like panicle. Fruit clearly exceeding perianth, indehiscent, smooth, 1,75–3,00 mm long, rounded or obtuse at apex. *Flowers green; October to February*. Disturbed places. Native to South America. *J.B.G. 1487*.

W S C N E

dinteri Schinz subsp. dinteri

Prostrate to decumbent herb. Internodes variable in length. Leaf lamina often 10–25 mm sometimes up to 30 mm long. Perianth segments of female flowers subequal. *Flowers whitish; March. Leistner 47*.

W S C N E

hybridus L. subsp. hybridus var. hybridus*

Erect, annual herb, up to 2 m high. Inflorescence a terminal branched or spike-like panicle. Larger bracteoles of female flowers $\pm$ 1,5–2,0 times as long as perianth. Upper part of fruit $\pm$ inflated and wrinkled, forming a 'beak'. *Flowers green; September to March*. Weed of disturbed or cultivated land. Native to Central America. *Liebenberg 3258*.

W S C N E

hybridus L. subsp. hybridus var. erythrostachys Moq.*

Erect, annual herb, up to 2 m high. Inflorescence a terminal branched or spike-like panicle. Larger bracteoles of female flowers $\pm$ 1,5–2,0 times as long as perianth. Upper part of fruit $\pm$ inflated and wrinkled, forming a 'beak'. *Flowers red; March to May*. Weed of disturbed places or cultivated land. Native of tropical and subtropical regions of the World. *Kluge 18*.

W S C N E

hybridus L. subsp. cruentus (L.) Thell.*

(= *A. cruentus* L.)

Erect, annual herb, up to 2 m high. Inflorescence a terminal branched or spike-like panicle. Larger bracteoles of female flowers $\pm$ as long as to 1,5 times as long as perianth. Upper part of fruit short, firm, not beaked, inflated or wrinkled. *Flowers green; February to April*. Disturbed places. Native to North America. *Brenan 14174*.

W S C N E

muricatus (Moq.) Hieron.*

(= *Euxolus muricatus* Moq.)

Perennial herb with prostrate or ascending stems, branches 150–400 mm long. Leaves linear to linear-

lanceolate, not wider than 10 mm. Inflorescence a terminal branched or spike-like panicle. Fruits muricate. *Flowers green; November*. Disturbed places. Native to South America. *Burt Davy sub PRE 2696*.

W S C N E

praetermissus Brenan

Erect herb, up to 1 m high. Leaves oblanceolate, not exceeding 10 mm. Inflorescence composed of axillary cymose clusters. Female flowers with subequal perianth segments with conspicuous acumen at apex. *Flowers green; July to June*. Disturbed places. *Brenan 14172*.

W S C N E

spinosus L.*

Erect herb, up to 1,5 m high. Axils of stem leaves usually with paired spines. Inflorescences axillary or forming terminal branched or spike-like panicles. *Flowers green; October to May*. Weed of cultivated land and roadsides. Native to Central America. *Venda Herb. 1095*.

W S C N E

thunbergii Moq.

Annual herb, up to 1 m high. Stems decumbent or erect, pubescent at least when young. Leaves broadest above middle and $\pm$ narrowed to obtuse apex. Inflorescences in axillary cymose clusters. Female perianth segments narrowed to a fine, subulate acumen 0,75–2,00 mm long. *Flowers green; July to June*. Weed in cultivated land and disturbed places. *Dumoulin 21*.

W S C N E

viridis L.*

(= *A. gracilis* Desf.)

Short-lived perennial herb, up to 1 m high. Inflorescence a terminal branched or spike-like panicle. Fruits indehiscent, closely and regularly wrinkled, not or slightly exceeding perianth. *Flowers green; January to May*. Disturbed places. Native to Europe. *Hanekom 1347*.

W S C N E

Celosia L. (s. Afr.: 1 sp.)

2292000

Townsend. 1975. Hooker's Icon. Pl. 38: 8,2.

Townsend. 1988. F.Z. 9,1: 30–39.

trigyna L.

Glabrous annual herb, up to 0,7 m high. Flowers in fascicles along floriferous branchlets. Perianth usually drying scarious white, $\pm$ 3 mm long. *Flowering February to September*. Bushveld, rocky ridges and open spaces. *Meunse 10187*.

W S C N E

Centema Hook. f. (s. Afr.: 1 sp.)

2311000

Cooke & Wright. 1912. F.C. 5: 418–419.

Townsend. 1988. F.Z. 9,1: 70–72.

subfusca (Moq.) T. Cooke.(= *Pupalia subfusca* Moq.)

Erect, perennial herb, up to 300 mm tall. Leaves narrowly ovate to ovate, base hastate. Flowers in sessile spikes. *Flowers red; January*. Bushveld, swampy areas. *Nel 92*.

W S C N E

Cyathula Blume (s. Afr.: 6 spp.) 2312000

Cooke & Wright. 1912. F.C. 5: 419–422.
Schinz. 1934. Natürl. PflFam. 16C: 46–47.
Suessenguth. 1966. F.S.W.A. 33: 13–15.
Townsend. 1988. F.Z. 9,1: 79–87.

cylindrica Moq.

(= *Achyranthes cylindrica* Bojer,
= *Pupalia alopecurus* Fenzl ex Drège)

Robust, erect herb or scrambler, up to 0,7 m high. Leaves broadly ovate, acuminate, hairy. Inflorescence elongate. *Flowers white; December to June*. Grassland. *Esterhuysen 21469*.

W S C N E

lanceolata Schinz(= *C. crispa* Schinz)

Dwarf shrub, up to 300 mm tall. Leaves narrowly ovate to ovate, crisped, base cuneate, sometimes with 2 auricles at sides. Inflorescence a head. *Flowers dull white; November to June*. Disturbed areas, brackish or sandy soil. *Coetzee 1274*.

W S C N E

natalensis Sond.

(= *C. spathulata* Schinz,
= *C. spathulifolia* Lopr.)

Annual erect herb or scrambler. Leaves oblong-spathulate. Inflorescence a globose head. Perianth segments of sterile flowers converted into rigid hooked spines. *Flowers greenish white; December to March*. Open woodland, sandy soil. *Raal 244*.

W S C N E

orthacantha (Hochst. ex Asch.) Schinz(= *Pupalia orthacantha* Hochst. ex Asch.)

Erect herb, up to 200 mm tall. Leaves ovate to elliptic, pubescent. Inflorescence slightly elongate. *Flowers white; February*. Open shrubland, among grass on edge of pan. *Zwanziger 719*.

W S C N E

uncinulata (Schrad.) Schinz

(= *C. globulifera* Moq.,
= *Desmochaeta uncinulata* Hiern)

Erect herb or scrambler, up to 1,5 m high. Leaves ovate. Inflorescence a globose head. Perianth segments of sterile flowers converted into rigid, hooked, dull yellow spines. *Flowers greenish white; February to July*. A weed of disturbed land, tending to spread in shady places. *Stalmans 1282*.

W S C N E

Gomphrena L. (s. Afr.: 2 spp.) 2338000

Burt Davy. 1926. Fl. Transv.: 185.

Suessenguth. 1966. F.S.W.A. 33: 16.

Henderson & Anderson. 1966. Common weeds in South Africa: 118–119.

Townsend. 1988. F.Z. 9,1: 130–133.

celosioides Mart.*

(= *G. celosioides* Mart. forma villosa Suess.,
= *G. decumbens* Jacq.)

Prostrate, decumbent or erect herb, up to 350 mm tall. Stems with white silky hairs. Leaves lanceolate to elliptic. Inflorescences terminal, globose to spicate as flowers mature. *Flowers 5 or 6 mm long, bracteoles papery; white; October to June*. Grassland, vleis, disturbed places. Native to South America. *Zambatis 69*.

W S C N E

globosa L.*

Herb, up to 300 mm tall. Stems erect with white silky hairs. Leaves obovate-lanceolate. Inflorescences terminal, globose. *Flowers purple-magenta; January to March*. Disturbed places. Native to tropical America. *Germishuizen 1055*.

W S C N E

Guilleminea Kunth (s. Afr.: 1 sp.) 2330010

Henderson & Anderson. 1966. Common weeds in South Africa: 114–115.

Townsend. 1988. F.Z. 9,1: 122–124.

densa (Willd.) Moq.*(= *Braylinea densa* (Willd.) Small)

Pubescent, perennial, prostrate or decumbent herb. Leaves opposite, spatulate. Inflorescences dense glomerules up to 5 mm in diameter, in leaf axils. *Flowers white; November to May*. Widespread weed of lawns, roadsides and disturbed veld. Native to America. *Hanekom 2262*.

W S C N E

Hermbstaedtia Rchb. (s. Afr.: 11 spp.) 2293000

Meeuse. 1961. Kirkia 2: 145–169.

Townsend. 1982. Kew Bull. 37: 82–90.

Townsend. 1988. F.Z. 9,1: 39–45.

capitata Schinz

Herb with erect or decumbent stems, up to 150 mm tall. Leaves linear. Anthers with free, notched pseudo-staminode on each side. Flowers 3 mm or less. Style included. *Flowers white; January*. *Leendertz sub TRV 6297*.

W S C N E

fleckii (Schinz) Baker & C.B. Clarke

(= *Celosia fleckii* Schinz,
= *H. rogersii* Burt Davy)

Erect, much-branched herb, up to 0,75 m high. Anthers set on short tooth projecting from top of what appears to be a widely compressed, round-tipped or bluntly

shouldered filament. Flowers 5 mm or less. Style exserted. *Flowers pink; January to May. Acacia thornveld, amongst grass. Brenan 14158.*

W S C N E

linearis Schinz

(= *Celosia linearis* (Schinz) Schinz,
= *H. schinzii* C.B. Clarke)

Slender, erect herb, up to 1 m high. Leaves lanceolate to linear. Anthers with short tooth on each side. Flowers shorter than 6 mm. *Flowers pink; September to March. Grassland, disturbed areas. Smook 5303.*

W S C N E

odorata (Burch.) T. Cooke var. odorata

(= *Celosia odorata* Burch.)

Erect herb, up to 0,6 m high. Leaves narrowly obovate. Inflorescence a spike. Axis of inflorescence pilose, right down to lowest flower. *Flowers white to pink; August to April. Bushveld, streambanks. Codd 5439.*

W S C N E

odorata (Burch.) T. Cooke var. aurantiaca (Suess.)

C.C. Towns.

(= *H. elegans* Moq. var. *aurantiaca* Suess.)

Herb, up to 450 mm tall. Leaves narrowly obovate. Inflorescence a spike. Axis of inflorescence pilose, right down to lowest flower. *Flowers deep brick-red; October to March. Bushveld, sandy soil. Coetzer 102.*

W S C N E

Kyphocarpa (Fenzl) Lopr. (s. Afr.:

3 spp.)

2309000

Cooke & Wright. 1912. F.C. 5: 414–416.

Suessenguth. 1961. F.S.W.A. 33: 17.

Townsend. 1988. F.Z. 9,1: 62–64.

angustifolia (Moq.) Lopr.

(= *Cyathula angustifolia* Moq.,

= *Sericocoma angustifolia* (Moq.) Hook. f.)

Erect herb, up to 500 mm tall. Inflorescence a spike, glomerules of 2–4 fertile and 1 or 2 sterile flowers, the latter reduced to spines. Perianth and spine-tipped bracteoles silky-hairy. *Flowers white; December to May. Grassland, roadsides. Meeuse 9629.*

W S C N E

cruciata (Schinz) Schinz

(= *Centema cruciata* Schinz)

Erect herb, up to 200 mm tall. Leaves linear-lanceolate, aristate. Flowers in glomerules collected into terminal spikes, each glomerule consisting of 3 fertile and 3 sterile flowers, the latter reduced to spines. *Flowers green to purplish pink; December to March. Roadsides and trampled veld. Retief 1295.*

W S C N E

Leucosphaera Gilg (s. Afr.: 1 sp.) 2313000

Suessenguth. 1966. F.S.W.A. 33: 18.

Townsend. 1988. F.Z. 9,1: 72–74.

bainesii (Hook. f.) Gilg

(= *Marcellia bainesii* (Hook. f.) C.B. Clarke,
= *Sericocoma bainesii* Hook. f.)

Silvery dwarf shrub, up to 0,65 m high. *Flowers in subglobose, sessile, hairy heads, cream; December to March. Scrubveld. Huntley 1874.*

W S C N E

Psilotrichum Blume (s. Afr.: 1 sp.) 2324000

Baker & Clarke. 1913. F.T.A. 6: 58.

Verdcourt. 1964. Kew Bull. 17: 492.

Townsend. 1988. F.Z. 9,1: 101–105.

scleranthum Thwaites

(= *P. africanum* Oliv.)

Shrub, up to 1 m high, trichotomously branched. Branches woody, glabrate. Leaves ovate to narrowly ovate. Inflorescence a spike. *Flowers cream; January to February. In shade of shrubs. Hemm 442.*

W S C N E

Pupalia Juss. (s. Afr.: 2 spp.)

2314000

Cooke & Wright. 1912. F.C. 5: 424.

Suessenguth. 1966. F.S.W.A. 33: 20.

Townsend. 1988. F.Z. 9,1: 88–93.

lappacea (L.) Juss. var. lappacea

(= *P. atropurpurea* (Lam.) Moq.)

Scandent herb, up to 1,5 m high. Inflorescence a terminal spike of small clusters of flowers. Sterile flowers with dull yellow hooked spines. *Flowers dull white; October to April. Open woodland, shady places, sandy soil. Raal 238.01.*

W S C N E

Sericorema (Hook. f.) Lopr. (s. Afr.:

2 spp.)

2307000

Cooke & Wright. 1912. F.C. 5: 412.

Suessenguth. 1961. F.S.W.A. 33: 22–23.

remotiflora (Hook. f.) Lopr.

(= *Pupalia remotiflora* Moq.,

= *Sericocoma remotiflora* Hook. f.)

Erect herb, up to 1 m high. Leaves linear, 5–15 mm long. Inflorescence with single fertile flowers. Perianth closing after fertilization. *Flowers white; September to April. Bushveld. Hardy & De Villiers 5159.*

W S C N E

sericea (Schinz) Lopr.

(= *Marcellia sericea* (Schinz) C.B. Clarke)

Erect herb, up to 1 m high. Leaves linear, 20–50 mm long. Inflorescence with 2 or 3 fertile flowers together. Perianth recurved after fertilization. *Flowers white; December to May. Bushveld, sandy flats. Strey & Schlieben 8636.*

W S C N E

ANACARDIACEAE

Shrubs or trees, often with resin ducts, particularly in bark. Leaves alternate, pinnately compound, trifoliolate or simple, without stipules. Flowers small, greenish or yellowish to white, regular, unisexual (although nonfunctional parts of the other sex usually present), very rarely bisexual. Petals 5 or 10, free. Stamens 5 or 10, free. Ovary superior, 1-locular; styles 1–3, often widely separated. Fruit a drupe.

Key after Dyer, Gen. 1: 326–327 (1975).

- 1a Leaves compound 2
- 1b Leaves simple 6
- 2a Leaves pinnate 3
- 2b Leaves 3-foliolate 5
- 3a Ovary 1-locular, with a single, pendulous ovule in each loculus; stamens 8 *Lannea*
- 3b Ovary 2–5-locular with a single pendulous ovule in each loculus; leaves imparipinnate 4
- 4a Flowers spicate; stamens 12–20, leaflets petioluled *Sclerocarya*
- 4b Flowers panicled; stamens 8–10; leaflets falcately narrowly ovate, subsessile *Harpephyllum*
- 5a Fruit a small, fleshy or dryish drupe *Rhus*
- 5b Fruit with a membranous, winged pericarp *Smodingium*
- 6a Leaves opposite or nearly so, margin entire; stamens 5, inserted below disc; ovary 1–3-locular; styles 3, connate at base *Protorhus*
- 6b Leaves alternate, margins entire; ovary symmetrical; styles free or nearly so, without columnar base *Ozoroa*

Harpephyllum Bernh. (s. Afr.: 1 sp.) 4562000

Fernandes & Fernandes. 1966. F.Z. 2: 555–557.

caffrum Bernh.

Evergreen tree, up to 15 m high. Leaves compound; leaflets pale green, 40–100 × 13–25 mm, terminal ones lanceolate to ovate, acuminate at apex, symmetrically cuneate at base, lateral ones lanceolate-falcate, with very acute apex, cuneate and abruptly contracted at base. Drupe red, 25–30 × 12–17 mm. *Flowers white or yellow; October to January*. Riverine forest. *Vahrmeijer 1483*.

W S C N E

Lannea A. Rich. (s. Afr.: 6 spp.) 4563000

Fernandes & Fernandes. 1966. F.Z. 2: 557–567.
Fernandes. 1966. Bolm. Soc. broteriana 40: 321–346.
Kokwaro & Gillett. 1980. Kew Bull. 34: 748–753.

discolor (Sond.) Engl.

(= *Odina discolor* Sond.)

Tree, up to 15 m high. Leaflets with dense tomentum of stellate hairs below, whitish; venation prominent below. Inflorescence spike-like. Drupes reddish to purple, glabrous, compressed. *Flowers creamy to bright tawny yellow; August to February*. Open woodland, rocky slopes, sandy soil. *De Winter 5971*.

W S C N E

edulis (Sond.) Engl. var. *edulis*

(= *Odina edulis* Sond.)

Suffrutex, up to 300 mm tall, at first ferruginous-stellate tomentose, later glabrescent. Leaflets 3–7, elliptic to subcircular, 90–200 × 40–120 mm; lateral nerves and reticulation raised beneath. *Flowers yellow to pink*;

September to October. Woodland, grassland and bushveld. *Scheepers 682*.

W S C N E

gossweileri Exell & Mendonça subsp. *tomentella* (R. & A. Fern.) J.B. Gillett

(= *L. edulis* (Sond.) Engl. var. *glabrescens* (Engl.) Burtt Davy)

Dwarf shrub, up to 200 mm tall. Leaves (3–)5–11-foliolate; leaflets light green turning reddish brown on both surfaces when dried, stellate hairs present on both surfaces. *Flowers yellow*. Grassland, rocky outcrops. *Pole-Evans 278*.

W S C N E

schweinfurthii (Engl.) Engl. var. *stuhlmannii* (Engl.)

Kokwaro

(= *L. kirkii* Burtt Davy,

= *L. stuhlmannii* (Engl.) Engl.)

Shrub or tree, up to 15 m high. Leaves 3–9-foliolate; terminal leaflet ovate to subcircular, apex obtuse to abruptly acuminate; upper leaf surface glabrous, stellate hairs present on lower part of lower surface. *Flowers greenish yellow to yellow; November to January*. River valleys forests, woodland. *Codd & Dyer 4613*.

W S C N E

Ozoroa Delile (s. Afr.: 18 spp.) 4589010

Merxmüller & Schreiber. 1963. F.S.W.A. 74: 2.

Fernandes & Fernandes. 1965. Bolm. Soc. broteriana 38: 150–183.

Coates Palgrave. 1977. Trees of southern Africa: 465–473.

Kokwaro & Gillett. 1980. Kew Bull. 34: 745–748.

Retief. 1990. Bothalia 20: 219–221.

albicans R. & A. Fern.

Shrub, up to 2 m high, many-stemmed from base. Leaves discolorous, glossy above, fine velvety silvery

below, very shortly petiolate; lamina oblong to ovate-oblong, 75–155 × 30–70 mm. *Flowers white; January to March. Woodland. Venter 10918.*

W S C N E

barbertonensis Retief

Shrublet, up to 1.5 m high. Leaves linear to narrowly oblong, 55–80 × 4–7 mm; upper leaf surface shiny green and lower surface greyish green caused by dense indumentum of hairs. *Flowers white; January to March. Grassland, rocky slopes, serpentine soils. Balsinhas 3129.*

W S C N E

engleri R. & A. Fern.

Shrub or small tree, up to 5 m high. Leaves oblong to narrowly elliptic, 40–140 × 10–33 mm, petioles 10–30 mm long; upper leaf surface glabrous to sparsely pubescent on midrib, lower surface with short, closely appressed silvery pubescence. *Flowers creamy white; January to February. Woodland, Wambia sandveld. Strey 4017.*

W S C N E

insignis Delile subsp. **reticulata** (Baker f.) J.B. Gillett

Tree, up to 15 m high. Leaf with lamina longer than 70 mm; main veins on upper leaf surface shortly pubescent; pubescence on lower leaf surface of short, appressed and longer spreading hairs. *Flowers white; December to January. Bushveld and woodland. Schlieben 9203.*

W S C N E

paniculosa (Sond.) R. & A. Fern. *sens. lat.*

Shrub or small tree, up to 6 m high. Leaves discolorous, midrib and lateral veins conspicuous on undersurface, narrowly elliptic, 40–120 × 10–40 mm, undersurface silvery to silky green with appressed hairs. *Flowers white; October to March. Woodland, hillsides. Herman 132.*

W S C N E

sphaerocarpa R. & A. Fern.

Tree, up to 7 m high, hairy. Leaves shortly petiolate, petioles up to 7 mm long, veins on undersurface prominent, margin thickened, slightly curled under, wavy. Fruits spherical. *Flowers creamy white; October to November. Woodland, rocky hillsides. De Winter & Killick 8918.*

W S C N E

Protorhus Engl. (s. Afr.: 1 spp.) 4576000

Engler. 1881. Bot. Jb. 1: 420–422.

longifolia (Bernh.) Engl.

(= *Rhus longifolia* (Bernh.) Soud.)

Evergreen tree, up to 15 m high. Leaves opposite, simple, linear-oblong or narrowly elliptic, 80–150 ×

24–40 mm, with conspicuous parallel secondary veins. Fruit asymmetrically oblong, fleshy, purple, indehiscent. *Flowers greenish white to yellow. Forest, forest margins, woodland, riverbanks. Stalmans 1409.*

W S C N E

Rhus L. (s. Afr.: 72 spp.)

4594000

Moffett. 1993. F.S.A. 19: 1–129.

batophylla Codd

Shrub, up to 1.5 m high. Leaves 3-foliolate; leaflets sessile, tending to fold along midrib, margin serrate-dentate, undersurface covered with dense, white to cream-coloured, woolly, persistent tomentum. Drupe dark red, drying brown. *Flowers yellowish green; November to March. Along watercourses in vicinity of chrome mines. Dyer, Verdoorn & Codd 5779.*

W S C N E

chirindensis Baker f.

(= *R. chirindensis* Baker f. forma *legatii* (Schönland) R. & A. Fern.)

Shrub, or tree up to 23 m high. Leaflets petiolulate; lamina ovate to ovate-lanceolate, base cuneate to attenuate, apex acuminate; terminal leaflet (30–)85(–130) × (13–)28(–54) mm. Panicles much-branched, multiflorous. *Flowers yellow; July to November. Forest, forest fringe. Hemm 25A.*

W S C N E

ciliata Licht. ex Roem. & Schult.

(= *R. ciliata* Licht. ex Roem. & Schult. forma *fastigiata* Schönland, = *R. ciliata* Licht. ex Roem. & Schult. forma *lepidota* Burt Davy)

Divaricate shrublet, up to 2 m high, multistemmed. Branches ending in spines. Leaflets oblanceolate to narrowly elliptic; terminal leaflet (17–)26(–33) × (2–)4(–5) mm. Drupes oblate, obloid (± 1.2 times broader than deep). *Flowers yellow; December to March. Grassland. Retief 1706.*

W S C N E

dentata Thunb.

Dwarf shrub, shrub (1–2 m) or small tree, up to 5 m high, glabrous to pubescent. Leaflets sessile, obovate to broadly obovate, base cuneate, margin prominently dentate with 1–5 mucronulate teeth in upper half. *Flowers yellow; September to January. Riverbanks, rocky hills, verges, understory of scrub forest. Drews 183.*

W S C N E

discolor E. Mey. ex Soud.

(= *R. grandifolia* Engl., = *R. villosissima* Engl.)

Suffrutex, up to 1 m high. Leaflets whitish tomentose below; lamina broadly linear, oblanceolate, narrowly elliptic or obovate; terminal leaflet (18–)82(–131) × (4–)18(–35) mm. *Flowers pale yellow to green; September to February. Grassland. Balsinhas 2866.*

W S C N E

divaricata Eckl. & Zeyh.(= *R. dentata* Thunb. var. *fulvescens* (Engl.) Burt Davy)

Shrub, up to 3 m high, erect, multistemmed to open-branched, often forming colonies. Leaflets rufescent below, entire, shape variable from ovate to narrowly obovate. Drupes circular, globose. *Flowers dull yellow; October to November*. Rocky hills. *Bredenkamp 256*.

W S C N E

dracomontana Moffett

Deciduous, virgate suffrutex, up to 0.8 m high. Shoots prominently lenticellate, arising from woody rootstock. Leaflets shiny and sticky, with blackish mealy indumentum. Grassland, on dolerite. No specimens in PRE.

W S C N E

engleri Britten

Shrublet, up to 3 m high, much-branched, woody, often spinous. Leaflets sessile, oblanceolate to obovate; terminal leaflet (13–)23(–36) × (4–)7(–11) mm. Drupes rhombic, discoid (more than 2.6 times broader than deep). *Flowers green; November to March*. Bushveld, calcareous substrates, chromite hills. *Van Jaarsveld 367*.

W S C N E

ernestii Schönland

Shrub or small tree. Leaflets densely tomentose to villous below and pubescent above; terminal leaflets (17–)60(–110) × (8–)31(–55) mm. *Flowering October*. Grassland. *Van Wyk 10283*.

W S C N E

gerrardii (Harv. ex Engl.) Schönland

Shrub, up to 2 m high, multistemmed. Leaflets olive-green, oblanceolate, broader than 10 mm (terminal leaflet) with margin irregularly, grossly, pauciserrate towards apex. *Flowers green; November to March*. Streambanks. *McMurtry 4082*.

W S C N E

gracillima Engl. var. **gracillima**(= *R. gracillima* Engl. var. *glaberrima* Schönland)

Virgate shrublet, up to 0.7 m high. Terminal leaflet more than 30 times longer than broad; petiole and lamina with minute, stiff white hairs giving branches and leaves a scabrid feel. *Flowers white or pale yellow; August to May*. Rocky hillsides. *Strey 3140*.

W S C N E

gracillima Engl. var. **glaberrima** Schönland(= *R. filiformis* Schinz)

Leaves generally on all parts of plant; leaflets without stellate hairs; petioles (5–)12(–22) mm. *Flowers light yellow with greenish tinge on outside surface; November to January*. *Davidse 5978*.

W S C N E

grandidens Harv. ex Engl.(= *R. galpinii* Schinz)

Slender to fairly dense shrub, up to 2 m high. Leaflets somewhat fleshy, narrowly elliptic to oblanceolate, prominently pauciserrate to pauciserrate with each tooth mucronate; terminal leaflets generally shorter than 60 mm and narrower than 15 mm. *Flowering October to January*. Forest verges, rocky hillsides. *Codd 2099*.

W S C N E

gueinzii Sond.(= *R. simii* Schönland,= *R. spinescens* Diels)

Spinous open shrub or small crooked-stemmed tree, up to 8 m high. Old bark fissured to blocky. Leaflet margin entire or crenulate to crispate in upper half, often undulate. Drupes smooth, oblate, ellipsoid. *Flowers cream; December to March*. Woodland and forest. *Venter 11579*.

W S C N E

keetii Schönland

Shrublet, up to 1.7 m high, slender, erect, single-stemmed. Leaves generally on upper half of plants; leaflets with stellate glands, lamina linear; lateral leaflets usually geniculate-falcate, terminal ones more than 20 times longer than broad. *Flowers yellow; December to March*. Bushveld, grassy hillsides. *Codd 3271*.

W S C N E

lancea L.f.(= *R. viminialis* Aiton)

Shrub or spreading tree, up to 12 m high. Old bark very dark reddish brown, fissured. Leaflets entire; terminal leaflets broadly linear, generally more than 8 times longer than broad, venation prominently penni-parallel. *Flowers pale greenish yellow; May to July*. Bushveld, watercourses, hillsides, plains. *Van der Schijff 9*.

W S C N E

leptodictya Diels(= *R. amerina* Meikle,= *R. rhombocarpa* R. & A. Fern.)

Spreading shrub or small to medium-sized tree, up to 10 m high. Terminal leaflet 4 times longer than broad, apex attenuate to acuminate, margins toothed. Drupes rhombic, discoid. *Flowers pale yellow; January to April*. Bushveld, woodland, rocky hillsides. *McMurtry 2041*.

W S C N E

lucida L. forma **lucida**(= *R. lucida* L. var. *outeniquensis* (Szyszyl.) Schönland,= *R. schlechteri* Diels)

Much-branched, unarmed, evergreen shrub, up to 3 m high. Leaflets obovate, becoming orange-yellow when old; lamina spatulate to widely obovate; terminal leaflets (12–)35(–68) × (5–)15(–35) mm; secondary veins few. *Flowers light yellow; August to October*. Edge of scrub forests. *Stalmans 202*.

W S C N E

magalismontana Sond. subsp. **magalismontana**

(= *R. burkeana* Sond.,
= *R. cinerea* R. & A. Fern.)

Dwarf, xerophytic shrublet, up to 0,6 m high. Leaflets yellowish or greyish, sessile; terminal leaflets 3–5 times longer than broad, (11–)49(–98) × (4–)12(–20) mm; lamina oblanceolate, narrowly elliptic, ovate or obovate, base cuneate, apex acute. *Flowers creamy yellow; October to March.* Woodland, grassland, rocky places. *Glen 1875.*

W S C N E

magalismontana Sond. subsp. **coddii** (R. & A. Fern.) Moffett

(= *R. coddii* R. & A. Fern.,
= *R. schliebenii* R. & A. Fern.)

Shrublet, up to 2 m high. Leaves lime-green, glossy above, dull grey-green below; lateral leaflets conduplicate; terminal leaflets (29–)63(–117) × (9–)21 (–39) mm; petiole (13–)37(–70) mm long, winged. *Flowers creamy yellow; January to February.* Woodland, bushveld, sandy soil. *Krynauw 1414.*

W S C N E

magalismontana Sond. subsp. **trifoliolata** (Baker f.)

Moffett
(= *R. trifoliolata* Baker f.)

Leaflets narrow, linear to oblanceolate; terminal leaflets (24–)58(–85) × (3–)7(–9) mm. *Flowering April.* Bushveld. *Burger 225.*

W S C N E

maricoana Moffett

Dwarf, rhizomatous, fastigate shrublet, 0,3–1,0 m high. Foliage dense. Lateral leaflets somewhat falcate. Drupes oblate, ellipsoid (± 1,4 times broader than deep) *Flowers yellow; January and April.* Grassland. *Moffett 3567.*

W S C N E

montana Diels

(= *R. gerrardii* (Harv. ex Engl.) Schönland var. *montana* (Diels) Schönland)

Slender, single- to multistemmed, deciduous shrub to small tree, up to 2,25 m high. Leaves consistently 4–7-foliolate; leaflets generally toothed, sessile, elliptic to narrowly elliptic obovate; terminal leaflets (27–)44(–68) × (8–)12(–16) mm. Drupe circular, obloid. *Flowering October to January.* Scrub forest margins. *Thode sub PRE 58507.*

W S C N E

pallens Eckl. & Zeyh.

Tree, up to 4 m high. Leaflets dull, brownish olive-green, secondary venation dark and immersed in lamina. Drupes never verrucose. *Flowering April to June.* Bushveld. *Codd 2667.*

W S C N E

pentheri Zahlbr.

Shrub or small tree, up to 5 m high, multistemmed, unarmed. Terminal leaflets shorter than 35 mm, obovate, sessile, apex retuse, rounded, obtuse or subacute, sparsely

hairy. *Flowers greenish yellow; February to April.* Bushveld, stony hillsides. *Kruger 357.*

W S C N E

pondoensis Schönland

Shrub, up to 1 m high. Branches longitudinally ribbed. Leaflets extremely rigid sharp pointed; terminal leaflets more than 7 times longer than broad, penni-parallel-veined; veins prominent; petioles shorter than 6 mm. *Flowers yellowish green; November to March.* Grassland, rocky slopes. *Venter 11236.*

W S C N E

pyroides Burch. var. **pyroides**

(= *R. baurii* Schönland,
= *R. pyroides* Burch. var. *puberula* (Eckl. & Zeyh.) Schönland)

Spinescent shrub or tree, up to 6 m high. Leaflets generally revolute and puberulous to tomentose, elliptic to obovate; secondary venation prominently exserted below. *Flowers white; October to May.* Grassland, bushveld, woodland. *Venter 7885.*

W S C N E

pyroides Burch. var. **gracilis** (Engl.) Burt Davy

(= *R. flexuosa* Diels,
= *R. villosa* L.f. var. *gracilis* Engl.)

Shrub or small tree, up to 4 m high, nonspinous. Leaflets olive-green, glabrous or puberulous; veins generally slightly prominent below. *Flowers yellow; November to March.* Streambanks, scrub forest margins. *Coetzee 848.*

W S C N E

pyroides Burch. var. **integrifolia** (Engl.) Moffett

(= *R. intermedia* Schönland)

Tree, up to 9 m high or much-branched shrub. Leaflets with yellowish green margins. Inflorescence much-branched and large, covering large parts of shrub when fully developed. *Flowers greenish to pale yellow; November to February.* Bushveld, montane grassland, forest. *Meeuse 9753.*

W S C N E

rehmanniana Engl. *sens. lat.*

Single-stemmed, much-branched tree, up to 5 m high. Leaflets obovate, broadly cuneate, apex truncate; lamina dull yellowish green (puberulous to tomentose) or gritty, often slightly ruffled to rugose. *Flowers yellow; January to March.* Montane grassland, bushland. *Kluge 1274.*

W S C N E

rigida Mill. var. **rigida**

(= *R. eckloniana* Sond.)

Dwarf shrublet to slender, much-branched, erect shrub. Leaflets sessile, glabrous, subcoriaceous, concolorous, dark green to blue green, conduplicate; lamina recurved, lanceolate, narrowly elliptic to narrowly ovate; terminal leaflets (3–)20(–37) × (1–)6(–11) mm; petioles generally longer than 15 mm. *Flowers white; January to March.* Grassland, rocky slopes. *Acoks 21028.*

W S C N E

rigida Mill. var. **dentata** (Engl.) Moffett(= *R. dyeri* R. & A. Fern.)

Dwarf shrublet to slender, much-branched, erect shrub. Leaflets conduplicate, broadly elliptic; petiole slender, generally shorter than 15 mm; petioles and branches yellowish. *Flowers yellowish green; December to January.* Among rocks. *Codd & Dyer 9096.*

W S C N E

rigida Mill. var. **margaretae** Burtt Davy ex Moffett

Shrublet with prostrate habit. Leaflets broadly elliptic; petioles generally shorter than 15 mm; petioles and branches not yellowish. *Flowers greenish; September to November.* Mixed bushveld, rocky outcrops. *Devenish 1398.*

W S C N E

rogersii Schönland(= *R. dentata* Thunb. var. *truncata* Burtt Davy)

Suffrutex or slender, fastigate shrub, up to 2 m high. Leaflets sessile, obovate to elliptic, base cuneate, apex variable, usually acute, margin thickened, markedly pauciserrate and teeth mucronulate towards apex; terminal leaflets (17–)55(–121) × (9–)19(–48) mm. *Flowers dull yellow; November to February.* Grassland. *Nel 108.*

W S C N E

tenuinervis Engl.(= *R. commiphoroides* Engl. & Gilg)

Shrub, up to 3 m high. Leaflets sessile, obovate to widely obovate, olive-green, puberulous to glabrous, margin crenate; terminal leaflet (10–)30(–84) × (6–)20(–45) mm. Fruit rhombic, glaucous. *Flowers greenish white; February to March.* Bushveld. *Codd 6601.*

W S C N E

tomentosa L.

Much-branched shrub or small tree, up to 5 m high. Leaflets usually 1.5–3.0 times longer than broad, discolorous, dark grey-green and glabrous to thinly pubescent above, creamy canescent and villous-tomentose to lanate below. *Flowers dull yellow; September to June.* Montane grassland, woodland. *Venter 11755.*

W S C N E

transvaalensis Engl.(= *R. eburnea* Schönland)

Many-stemmed shrub, up to 2 m high. Leaflets subsessile, elliptic to narrowly elliptic, base cuneate to attenuate, apex acute, margin entire, midrib prominent and yellow. Panicles numerous, relatively short, up to 50 mm long. *Flowers cream; September to December.* Bushveld. *Jordaan 76.*

W S C N E

tridactyla Burch.

Shrub, up to 4 m high. Leaves 3-foliolate, petiolate; leaflets sessile, olive-green, glabrous, amphiostomatus; lamina linear; terminal leaflets (11–)29(–50) × (1.0–)1.7(–2.1) mm, apex rounded, mucronulate, margin entire. Panicles lax. Drupes rhombic, discoid,

glabrous, shiny, light to dark brown, ± 5.8 × 2.0 mm. *Flowers greenish yellow; December to March.* *Peeters, Gericke & Burelli 275.*

W S C N E

tumulicola S. Moore sens. lat.(= *R. dura* Schönland,= *R. synstylica* R. & A. Fern. var. *synstylica*)

Straggling shrub or tortuous small tree, up to 3.5 m high. Leaflets rigid to coriaceous, strongly conduplicate; tertiary veins of leaflets raised and prominently reticulate; lamina widely elliptic, elliptic to obovate; terminal leaflets (20–)49(–108) × (13–)27(–49) mm. *Flowers greenish yellow; September to November.* Grassland, woodland. *Kluge 1996.*

W S C N E

wilmsii Diels

Shrublet, up to 0.5 m tall, compact, erect, densely leaved, forming colonies. Lateral leaflets generally not falcate, secondary veins rarely forked close to midrib. *Flowers yellow; January to April.* Mountainsides. *Hardy 4038.*

W S C N E

zeyheri Sond.(= *R. zeyheri* Sond. var. *parvifolia* Burtt Davy)

Multistemmed, much-branched shrub, up to 2 m high. Bark smooth, young bark and veins reddish. Leaflets blueish green, somewhat rubbery; lamina obovate; terminal leaflets (9–)30(–53) × (4–)14(–27) mm; tertiary venation prominent, reticulate. *Flowers dull yellow; October to December.* Bushveld, woodland. *Van Rooyen 2088.*

W S C N E

Sclerocarya Hochst. (s. Afr.: 1 sp.) 4558000

Fernandes & Fernandes. 1966. F.Z. 2: 552–553.

Kokwaro & Gillett. 1980. Kew Bull. 34: 756–757.

Van Wyk. 1984. Field guide to the trees of the Kruger National Park: 138.

birrea (A. Rich.) Hochst. subsp. **caffra** (Sond.) Kokwaro(= *S. caffra* Sond.,= *S. schweinfurthiana* Schinz)

Tree, up to 18 m high. Leaves compound, crowded near ends of branches; leaflets ovate to elliptic, 30–100 × 15–40 mm, discolorous; petiolules and petioles long and slender, often tinged with pink. Fruit yellow, 30–35 mm in diameter, with very juicy mesocarp. *Flowers reddish pink; September to October.* Bushveld and woodland. *De Winter 9432.*

W S C N E

Smodingium E. Mey. ex Sond. (s. Afr.:

1 sp.)

4588000

Sonder. 1860. F.C. 1: 523.

Wells. 1988. Flower. Pl. Afr.: t. 1968.

argutum *E. Mey. ex Sond.*

Shrub or small tree, up to 8 m high. Leaves 3-foliolate; leaflets shortly stalked, lamina lanceolate, 60–120 × 15–30 mm, veins prominent, margins deeply and

sharply toothed. Fruit an achene with membranous, winged pericarp, 5–10 mm wide. *Flowers light yellow; February to March.* Gardens, roadside. *Balsinhas 3569.*

W S C N E

ANNONACEAE

Trees or shrubs, sometimes climbers. Leaves alternate, entire, exstipulate, with glaucous or metallic sheen when fresh. Flowers solitary or fascicled, regular, bisexual, fragrant. Sepals 2 or 3. Petals (3 or 4)–6, hypogynous. Stamens numerous, usually spirally arranged. Carpels numerous. Fruiting carpels usually stipitate and free, dry or fleshy, indehiscent or rarely follicular.

Key after Dyer, Gen. 1: 158–159 (1975).

- 1a Carpels united into a 1-locular ovary with parietal placentas; stigmas radiating; petals united below, unequal, often with undulating margins *Monodora*
- 1b Carpels free or solitary, or if united, forming multilocular syncarp; stigmas ± erect; petals free or slightly united, rarely with undulating margins 2
- 2a Carpels many, 1-seeded, fused with torus to form a compound fruit (syncarpium) *Annona*
- 2b Carpels free in fruit 3
- 3a Ovules 1 or 2 in each carpel 4
- 3b Ovules several to many in each carpel 5
- 4a Flowers solitary or in cymes, extra-axillary, peduncle rarely not woody *Monanthotaxis*
- 4b Flowers fascicled on flattened, recurved, woody peduncle *Artabotrys*
- 5a Flower bud extended into straight or curved beak, petals long-acuminate from an ovate base *Xylopia*
- 5b Flower bud obtuse or subacute 6
- 6a Climbing or trailing plants with stellate pubescence; stigmas truncate with margin rolled inwards all round *Uvaria*
- 6b Trees or shrubs; petals transversely folded in bud; stigma 2-lobed, with lobes oblong or dilated *Hexalobus*

Annona *L. (s. Afr.: 2 spp.)*

2729000

Robson. 1960. F.Z. 1: 141.

senegalensis *Pers. subsp. senegalensis*

(= *A. chrysophylla* Bojer)

Shrub or small tree, up to 8 m high. Leaves oval to almost circular, undersurface covered with pale brown hairs. Fruit lumpy, egg-shaped with scaly skin enclosing fleshy pulp and numerous seeds. *Flowers cream to yellow; October to December.* Riverbanks, woodland, forest margins. *Van Wyk 5254.*

W S C N E

Artabotrys *R. Br. (s. Afr.: 2 spp.)*

2724000

Robson. 1960. F.Z. 1: 129.

brachypetalus *Benth.*

Shrub, small tree or liane. Leaves tend to be rounded at apex. Sepals large and villous. Petals ovate, almost completely closed in bud, sparsely pubescent or glabrous. *Flowers yellow to cream or greenish; October to November.* Forest, deciduous woodland, thickets. *Carr 252.*

W S C N E

monteiroae *Oliv.*

(= *A. nitidus* Engl.)

Shrub, small tree or liane. Leaves tend to be abruptly acute. Sepals small, sparsely pubescent. Petals linear,

broadened at base, exposed in bud, pubescent. *Flowers yellow to cream or greenish; November to December.* Forest, woodland, thickets. *Obermeyer 1240.*

W S C N E

Hexalobus *A. DC. (s. Afr.: 1 sp.)*

2716000

Robson. 1960. F.Z. 1: 116.

monopetalus (*A. Rich.*) *Engl. & Diels* var. **monopetalus**

(= *H. glabrescens* Hutch. & Dalziel ex Burt Davy)

Tree or shrub, up to 7 m high. Leaves broadly elliptic, apex obtuse to rounded, concolorous with dark brown, simple hairs on lower side. Sepals dark brown. *Flowers greenish cream; July to June.* Hillsides, sandy soil. *Acocks 23586.*

W S C N E

Monanthotaxis *Baill. (s. Afr.: 1 sp.)*

2696000

Verdcourt. 1971. Kew Bull. 25: 20.

caffra (*Sond.*) *Verdc.*

(= *Guatteria caffra* Sond.,

= *Popowia caffra* (Sond.) Benth.)

Shrub or semiclimber. Branches often zig-zag; young branches, petioles and main veins with simple hairs. Leaves glaucous underneath. Fruits suborbicular, stipes 2–5 mm long. *Flowers cream.* Woodland. *Pienaar 1086.*

W S C N E

Monodora Dunal (s. Afr.: 1 sp.) 2733000
Robson. 1960. F.Z. 1: 145.
Codd. 1983. Flower. Pl. Afr. 47: t. 1870.

junodii Engl. & Diels
Deciduous shrub or small tree, up to 7 m high. Petals united at base, outer 3 large, spreading and pale green to purplish, inner 3 smaller, reddish purple, clawed. *Flowers pendulous, brownish red; October to February.* Hillsides. *Codd & Dyer 4539.*
W S C N E

Uvaria L. (s. Afr.: 2 spp.) 2673000
Verdcourt. 1971. Kew Bull. 25: 2.

caffra E. Mey. ex Sond.
Shrublet, up to 1 m high. Calyx with lobes distinct in bud, separating into regular sepals at anthesis. Fruit with carpels ovoid, stipes 3–8 mm long, 1–3-seeded. *Flowers yellow.* Savanna, riverine forest, rocky hillsides. *Van Rooyen 3424.*
W S C N E

gracilipes N. Robson
Shrublet, up to 0,6 m high. Leaves cuneate to rounded at base; petiole 1–3 mm long. Flowering pedicels ± 22–30 mm long, slender, not thickened upwards, sparsely pubescent. *Flowers yellow; December.* Riverine forest. *Hemm 434.*
W S C N E

lucida Benth. subsp. virens (N.E. Br.) Verdc.
(= *U. gazensis* Baker f.,
= *U. virens* N.E. Br.)
Shrub or small tree, up to 3 m high. Calyx cupular in bud, splitting ± irregular into 3 lobes at anthesis. Fruit with carpels cylindric, stipes 3–11 mm long, several-seeded. *Flowers greenish white; November to December.* Shrubland, sandy soil. *Potgieter 7602.*
W S C N E

Xylopia L. (s. Afr.: 3 spp.) 2717000
Robson. 1960. F.Z. 1: 133.

odoratissima Welw. ex Oliv.
(= *X. antunesii* Engl. & Diels)
Shrub or tree, up to 7 m high, much-branched. Leaves oblong or elliptic to lanceolate or suborbicular, sub-acute to emarginate. *Flowers dull yellow; October to December.* Woodland, hillsides. *Stalmans 285.*
W S C N E

parviflora (A. Rich.) Benth.
(= *X. holtzii* Engl.)
Tree, up to 30 m high, with clean bole and sparingly branched crown. Leaves narrowly oblong to elliptic, usually acute or acuminate. *Flowers greenish brown; November to January.* Forest. *Hemm 881.*
W S C N E

APIACEAE

Plants herbaceous, occasionally shrubs or trees, often aromatic. Stems often with soft pith or hollow internodes. Leaves alternate, usually much-divided, forming sheath at base, without stipules. Inflorescence a simple or compound, flat-topped umbel, rarely in heads. Calyx greatly reduced. Petals 5, free, greenish, whitish or yellowish. Stamens 5, free. Ovary inferior with 2 separate styles. Fruit dry, dividing into 2 mericarps.

Key after Burtt in Edinb. J. Bot. 48,2: 156–161 (1991).

- 1a Leaves simple or palmately lobed or digitate 2
- 1b Leaves pinnate, pinnately lobed or decomposed, or basal leaves simple and cauline pinnately dissected 15
- 2a Plants woody, not dying down to ground level after flowering 3
- 2b Plants herbaceous (i.e. stems dying down to ground level after flowering, occasionally radical leaves persistent, or stems creeping and only inflorescence dying) 6
- 3a Fruits hairy Deverra
- 3b Fruits glabrous 4
- 4a Mericarps heteromorphic, winged Heteromorpha
- 4b Mericarps homomorphic, not winged 5
- 5a Fruits strongly compressed laterally, solitary in umbel Centella
- 5b Fruit not more than slightly compressed laterally, several in umbel Polemannia
- 6a Leaves digitately compound 7
- 6b Leaves simple or palmately lobed 8
- 7a Fruits dorsally compressed Peucedanum
- 7b Fruits not compressed Pimpinella
- 8a Leaf blade many times longer than broad 9
- 8b Leaf blade not more than 3 times as long as broad 11

9a	Fruits strongly compressed laterally, solitary in umbel, without vittae	Centella
9b	Fruits not laterally compressed, several in umbel, vittae present	10
10a	Umbels simple with conspicuous involucre of bracts united at base, pale green, greenish yellow or silvery white sometimes becoming pinkish inside	Alepidea
10b	Umbels compound, involucre bracts free	Bupleurum
11a	Fruits laterally compressed; low creeping plants	12
11b	Fruits not compressed, or slightly compressed dorsally	13
12a	Petiole with membranous stipules at base; furrows between fruit ribs smooth	Hydrocotyle
12b	Petiole sheathing at base, without stipules; furrows between fruit ribs wrinkled	Centella
13a	Leaves entire or toothed	Alepidea
13b	Leaves palmately lobed or divided	14
14a	Involucral bracts united; fruit glabrous except for some blunt scales at top	Alepidea
14b	Involucral bracts free; fruit with hooked bristles	Sanicula
15a	(1) Plants woody, not dying down to ground level after fruiting	16
15b	Plants herbaceous, either dying down to ground level after fruiting or low creeping herbs	20
16a	Fruits (and ovaries) hairy or bristly	17
16b	Fruits (and ovaries) glabrous	18
17a	Plant leafless at flowering; leaves, if present, with linear segments	Deverra
17b	Plant with well-developed leaves at flowering; leaf segments broadly elliptic	Diplolophium
18a	Mericarps unequal, ribs winged	Heteromorpha
18b	Mericarps equal, not winged or with marginal wings only	19
19a	Shrub or small tree; leaves deciduous, simply pinnate with fine-tipped teeth; vittae inconspicuous or absent in ripe fruit	Steganotaenia
19b	Subshrub; leaves evergreen, pinnatisect; vittae conspicuous, 1 in each furrow between ribs and 2 on commissure	Peucedanum
20a	Foliage leaves all radical, those on stem reduced to a sheath with or without vestigial lamina	21
20b	Foliage leaves both radical and cauline	22
21a	Fruits strongly compressed dorsoventrally; basal leaves sometimes present at flowering	Peucedanum
21b	Fruits not compressed; leaves usually withered or not yet produced at flowering	Annesorhiza
22a	Fruit producing an elongated linear beak	Scandix
22b	Fruit not producing a beak	23
23a	Fruits hairy or bristly	24
23b	Fruits glabrous	30
24a	Perennials or biennials	25
24b	Annuals or biennials	28
25a	Involucre absent	Pimpinella
25b	Involucre present	26
26a	Involucral bracts pinnatisect	Daucus
26b	Involucral bracts entire	27
27a	Leaves pinnate with broad leaflets	Diplolophium
27b	Leaves usually absent at flowering, if present segments linear	Deverra
28a	Fruit processes large multicellular, cells multiseriate, sometimes flattened at base and usually with recurved barbs (glochidiate) at apex	Daucus
28b	Fruit processes unicellular, or at least of uniseriate cells, neither flattened nor barbed	29
29a	Fruits much compressed, discoid, margins thickened, mericarps not separating	Choritaenia
29b	Fruits not compressed, mericarps separating when ripe	Pimpinella
30a	(23) Perennials or biennials	31
30b	Annuals or biennials	38
31a	Fruits dorsoventrally compressed	32
31b	Fruits $\pm$ round in cross section	33
32a	Perennials; 5 ribs equally spaced, wing lying outside marginal ribs	Peucedanum
32b	Biennials; 3 central ribs equally spaced, marginal ones distant and lying just below tip of wing	Pastinaca
33a	Fruit at least twice as long as broad	Foeniculum
33b	Fruit distinctly less than twice as long as broad	34
34a	Involucre absent	35
34b	Involucre present	36
35a	At least some umbels shortly pedunculate, apparently leaf-opposed	Apium
35b	All umbels on well-developed peduncles	Pimpinella
36a	Leaves decompound	Conium
36b	Leaves simply pinnate	37
37a	Teeth on leaflet margin spreading	Berula
37b	Teeth on leaflet margin incurved and often slightly overlapping	Sium
38a	(30) Involucral bracts pinnatisect	Ammi
38b	Involucral bracts undivided or absent	39

- 39a Involucre present **Conium**
 39b Involucre absent 40
- 40a Outer flowers with outer petals enlarged **Coriandrum**
 40b Outer flowers with all petals equal 41
- 41a Calyx teeth distinct **Pimpinella**
 41b Calyx teeth obsolete 42
- 42a Biennial; umbels strongly pedunculate **Conium**
 42b Annual; umbels sessile or subsessile **Ciclospermum**

Alepeidea Delaroche (s. Afr.: 29 spp.) 5922000

Dummer. 1913. Trans. R. Soc. S. Afr. 3,1: 1–20.

Pott. 1914. Ann. Transv. Mus. 4: 1–2, 206.

Weimark. 1949. Bot. Notiser 4: 217–268.

Burt. 1991. Edinb. J. Bot. 48,2: 163–171.

amatymbica Eckl. & Zeyh. var. amatymbica

Robust herb, 1–2 m high. Evenly distributed teeth standing straight out from leaf margins. Involucre of 5 large segments with 5 smaller alternating teeth. Peduncles glabrous. Mericarps smooth. *Flowers white, cream or pale yellow; January to April.* Grassland, near water. *Galpin 9805.*

W S C N E

attenuata Weim.

Herb, up to 1 m high. Basal leaves serrate; cilia on leaf margins 2–3 mm long; cauline leaves numerous, narrow, with long petioles. Involucre of 10 equal to subequal bracts. Mericarps tuberculate. *Flowers white; January to March.* Grassland. *Galpin 12455.*

W S C N E

basinuda Pott var. basinuda

Herb, (0,2)–0,3–0,6 m high. Radical leaves rosulate, obovate to obovate-elongate; leaf margin dentate or serrate-setose; cauline leaves covering stem. Involucre of 10 rigid, acuminate, keeled, smooth segments. Mericarps rugose. *Flowers white; November to April.* Open grassy veld. *Galpin 1290.*

W S C N E

basinuda Pott var. subnuda Weim.

Herb, (0,2)–0,3–0,6 m high. Same as var. *basinuda* but cauline leaves distant. *Flowers white; January.* Grassland. *Kluge 2139.*

W S C N E

comosa Dummer

(= *A. longifolia* Dummer subsp. *comosa* (Dummer) Weim.)

Herb, 250–500 mm tall. Radical leaves oblanceolate acuminate, dentate-serrate; cauline leaves numerous. Involucre 10–15 mm in diameter, of 10 rigid, acuminate bracts, triangular ovate. Mericarps rugose. *Flowers white; November to January.* Grassland. *Codd & Bruce 3635.*

W S C N E

gracilis Dummer

Herb, 0,15–0,50(–0,70) m high. Radical leaves rosulate, linear-lanceolate, acute to obtuse, serrate-setose. Involucre 10–15 mm in diameter, of 10 rigid, lanceo-

late acuminate bracts. Mericarps rugose. *Flowers white; February.* Open grassland. *Meeuse 9840.*

W S C N E

jenkinsii Pott

Herb, up to 0,6 m high. Radical leaves petiolate, blade oblong, base rounded, apex obtuse or subacute; margin serrate-setose; cauline leaves becoming gradually smaller, linear-oblong, acuminate, amplexicaul, auriculate. Involucre of 10 rigid, unequal, acuminate, keeled, white segments. Mericarps muricate. *Flowering November.* *Jenkins 9858* (type—not seen).

W S C N E

longiciliata Schinz ex Dummer

(= *A. schlechteri* H. Wolff)

Herb, 250–500 mm tall. Radical leaves rosulate, obovate-spathulate, petiolate; leaf margins with 3–6 mm long, stiff, equally long bristles close together and evenly distributed along entire length of margin. Mericarps rugose. *Flowers whitish green; November to January.* Grassland. *Rademacher 8197.*

W S C N E

longifolia E. Mey. ex Dummer subsp. lancifolia Weim.

Herb, 200–300 mm tall. Radical leaves linear-lanceolate, petiolate, margins crenate-dentate; cauline leaves numerous, erect, linear to linear-lanceolate, smaller than radical. *Flowers white; January.* Rocky mountainside. *Galpin 13370.*

W S C N E

longifolia E. Mey. ex Dummer var. longifolia

(= *A. gracilis* Dummer var. *major* Weim.)

Herb, up to 0,7 m high. Radical leaves narrowly oblong, lanceolate or oblanceolate, obtuse or rounded at apex; serrate-setose. Involucre 10–15 mm in diameter, of 10 rigid, acuminate bracts, triangular ovate. Mericarps rugose. *Flowers white; November to May.* Grassland. *Rogers 4750.*

W S C N E

longifolia E. Mey. ex Dummer var. angusta Dummer

(= *A. longifolia* Dummer subsp. *angusta* (Dummer) Weim.)

Herb, 0,5–0,7 m high. Radical leaves linear-spathulate to linear-oblanceolate, tapering gradually at base; low marginal teeth on lamina; cauline leaves distant. Involucre of 10–15 mm in diameter, 10 rigid acuminate bracts, triangular ovate. Mericarps rugose. *Flowers white; November to February.* Grassland. *Oberneyer 287.*

W S C N E

reticulata Weim.

Herb, (120–)300–400 mm tall. Radical leaves ovate to obovate, evenly ciliate-dentate; cauline leaves entirely covering stem. Involucre of 10 reticulately veined, comparatively broad bracts. Mericarps rugose. *Flowers white* (?); *February to March*. Grassland. *Schlechter 4748*.

W S C N E

setifera N.E. Br.

(= *A. jacobsoniae* Dummer)

Herb, (0,15–)0,30–0,60(–0,70) m high. Radical leaves obovate to oblong-obovate, apex rounded, base rounded to cordate; margin dentate or serrate-setose; cauline leaves covering stem. Involucre of 10 long, acuminate bracts. Mericarps rugose. *Flowers white; December to May*. Grassland. *Codd 8317*.

W S C N E

Ammi L. (s. Afr.: 1 sp.)

6016000

Wolff. 1927. Pflanzenreich 90: 115–120.

majus L. var. **glaucofolium** (L.) Godr.*

(= *A. glaucofolium* L.,

= *A. diversifolium* Noulet var. *glaucofolium* (L.) Noulet)

Herb, up to 1 m high. Ultimate segments of leaves lanceolate, serrate. Involucral bracts pinnate. *Flowers white; November to April*. Disturbed places, escaped from cultivation. Native of Europe and Asia. *Van der Westhuizen 266*.

W S C N E

Annesorhiza Cham. & Schltdl. (s. Afr.:

14 spp.)

6078000

Burt. Davy. 1932. Fl. Transv. 2: 18, 517–518.

Burt. 1988. Notes R. bot. Gdn Edinb. 45: 91–92.

Burt. 1991. Edinb. J. Bot. 48,2: 177–182.

flagellifolia Burt. Davy

Herb, 0,50–0,75 m high. Radical leaves 3-ternate, segments linear-filiform, angularly ribbed. Involucre and involucre 5-leaved. Fruits with narrow but distinct wings. *Flowers yellow; August to December*. Grassland. *Kluge 2140*.

W S C N E

wilmsii H. Wolff

Herb, up to 150 mm tall. Radical leaves ternate, segments pinnate or bipinnate. Involucre 6- or 7-leaved. Fruits have thick blunt ribs. *Flowers pale yellow; October to December*. Grassland and rocky outcrops. *Hilliard & Burt 18447*.

W S C N E

Apium L. (s. Afr.: 4 spp.)

6004000

Cannon. 1978. F.Z. 4: 582–585.

Burt. 1991. Edinb. J. Bot. 48,2: 182–184.

graveolens L.*

Biennial or perennial, robust, strongly smelling herb, 0,3–1,0 m high. Leaves simply pinnate; segments $\pm$ deltoid, lobed and crenate-serrate. Involucre wanting. Fruits with broad furrows between slender ribs. *Flowers white or greenish white; October to December and in May*. In wet ditches and along riverbanks. Native of Europe and Asia. *Obermeyer Tvl.Mus. 29323*.

W S C N E

Berula Koch (s. Afr.: 1 sp.)

6038010

Cannon. 1978. F.Z. 4: 600.

Burt. 1991. Edinb. J. Bot. 48,2: 185–186.

erecta (Huds.) Coville subsp. **thunbergii** (DC.) B.L.

Burt

(= *Sium thunbergii* DC.,

= *S. thunbergii* DC. var. *mossii* Burt. Davy)

Perennial herb, up to 2,5 m high, glabrous. Leaflet margins coarsely and rather irregularly toothed. Bracts present. Fruit not strongly dorsiventrally compressed. *Flowers white; October to April*. In marshy areas and at sides of streams. *Codd 2637*.

W S C N E

Bupleurum L. (s. Afr.: 2 spp.)

5994000

Sonder. 1894. F.C. 2: 541.

Bailey. 1977. Hortus Third: 190.

Burt. 1991. Edinb. J. Bot. 48,2: 187–188.

mundii Cham. & Schltdl.

(= *B. mundii* var. *mossii* Burt. Davy,

= *B. mundii* var. *latibracteolata* Burt. Davy)

Perennial herb, up to 1 m high. Leaves linear-subulate, parallel-veined. Bracts lanceolate. Fruit oblong. *Flowers yellow; November to July*. Grassland, rocky areas. *Codd 3968*.

W S C N E

rotundifolium L.*

Perennial herb, up to 500 mm tall. Leaves cordate-clasping, triangular-ovate. Bracts similar but much smaller. *Flowers yellowish green; October to November*. Disturbed places. Native to Europe. *Mogg 16770*.

W S C N E

Centella L. (s. Afr.: 39 spp.)

5894000

Cannon. 1978. F.Z. 4: 561–565.

Burt. 1991. Edinb. J. Bot. 48,2: 190–200.

asiatica (L.) Urb.

(= *Hydrocotyle asiatica* L.)

Creeping herb. Leaves reniform to orbicular with distinct basal sinus; papery, as broad as long or broader than long, often glabrous below, occasionally thinly

pilose. Flowers dark crimson to greenish white; September to May. In damp grassy places or under bushes. *Van der Schijff 1990.*

W S C N E

glabrata L. var. **natalensis** Adamson

Prostrate or sprawling herb. Leaves linear, ± 2 mm wide, flat with an obvious midrib. Flowers whitish green tinged with red; December to January. Under shrubs and in grassland. *Kluge 1651.*

W S C N E

Choritaenia Benth. (s. Afr.: 1 sp.) 6129000

Burt. Davy. 1932. Fl. Transv. 2: 521.

capensis Benth.

Prostrate annual herb. Leaves irregularly subternately cut; lobes capillary obtuse. Fruits pubescent; ribs forming broad densely villose-ciliate margin. Flowers pale pink to white; September to November. Grassland. *Hanekom 1834.*

W S C N E

Ciclospermum Lag. (s. Afr.: 1 sp.) 6004010

Sprague. 1923. J. Bot., Lond. 61: 129.

Cannon. 1978. F.Z. 4: 582.

Burt. 1991. Edinb. J. Bot. 48,2: 202.

leptophyllum (Pers.) Eichler*

(= *Apium leptophyllum* (Pers.) F. Muell.,

= *Pimpinella leptophyllum* Pers.)

Annual herb, up to 0.6 m high. Leaves 3- or 4-pinnate, divided into numerous linear-filiform segments. Flowers white; June to January. In lawns, cultivated lands, gardens and along riverbanks. Native of America. *Gersner 6910.*

W S C N E

Conium L. (s. Afr.: 4 spp.) 5970000

Hilliard & Burt. 1985. S. Afr. J. Bot. 51,6: 465-474.

Burt. 1991. Edinb. J. Bot. 48,2: 202-203.

chaerophylloides (Thunb.) Sond.

(= *Seseli chaerophylloides* Thunb.)

Biennial herb, up to 2 m high. Bracteoles united at base. Flowers greenish yellow; November to January. Rough open grassland near rivers and streams; also in damp hollows and gullies. *Leendertz 10855.*

W S C N E

fontanum Hilliard & B.L. Burt var. **fontanum**

Biennial herb, up to 1 m high. Ultimate leaf lobes mostly broad and blunt. Bracteoles free or shortly united at base, linear or linear-lanceolate. Mericarps 3-5 mm long, with 5 prominent ribs. Flowers white;

October to November. Seepage lines, marshy stream-banks, damp ground at foot of cliffs. *Hilliard & Burt 9151.*

W S C N E

Coriandrum L. (s. Afr.: 1 sp.) 5953000

Cannon. 1978. F.Z. 4: 575.

Burt. 1991. Edinb. J. Bot. 48,2: 203.

sativum L.*

Annual herb, up to 0.7 m high. Lower leaves 1- or 2-pinnate, segments ovate in overall outline; with cuneate base. Upper leaves finely divided into linear segments. Mericarps suborbicular, with obtuse filiform ribs, with zigzag markings between them. Outer petals of outer flowers in each umbel much enlarged. Flowers white to pinkish white; October. Escaped from cultivation. Native to southern Europe and Asia Minor. *Kings 1103.*

W S C N E

Daucus L. (s. Afr.: 1 sp.) 6142000

Burt. Davy. 1932. Fl. Transv. 2: 520.

Bailey. 1977. Hortus Third: 365.

carota L.*

Biennial herb, up to 1 m high. Leaves pinnate; ultimate leaf segments finely cut into many narrow segments. Umbels becoming strongly concave (forming a cup) in fruit. Flowers white to yellowish; September to March. Disturbed places. Native to Europe and Asia. *Botha & Ubbink 2035.*

W S C N E

Deverra DC. (s. Afr.: 2 spp.) 6013000

Schreiber. 1967. F.S.W.A. 103: 4-5.

Pfisterer & Podlech. 1986. Mitt. bot. StSamml., Münch. 22: 571-604.

Cannon. 1978. F.Z. 4: 585.

burchellii (DC.) Eckl. & Zeyh.

(= *D. aphylla* (Cham. & Schltdl.) DC. var. *burchellii* DC.,

= *Pituranthos burchellii* (DC.) Benth. & Hook. f. ex Schinz)

Subshrub, 0.4-1.0 m high, almost leafless. Fruit with thickish warty 'hairs' (papillae). Flowers green to yellow, yellowish white; November to April. Grassland, near water. *Acocks 12422.*

W S C N E

Diplolophium Turcz. (s. Afr.: 1 sp.) 6054000

Cannon. 1978. F.Z. 4: 600-603.

Hilliard & Burt. 1985. Notes R. bot. Gdn Edinb. 42,2: 259.

swynnertonii (Baker f.) Norman

(= *Physotrichia swynnertonii* Baker f.,

= *D. buchananii* (Oliv.) Norman subsp. *swynnertonii* (Baker f.) Cannon)

Perennial herb, 1-2 m high. Ultimate leaf segments elliptic to subrotund. Umbels finely and densely pubes-

cent. Bracts well developed, green with membranous margin. *Flowers greenish white to creamy yellow; July.* Moist places in rocky montane grassland and woodland. *Netshiungani* 652.

W S C N E

Foeniculum Mill. (s. Afr.: 1 sp.) 6062000

Bailey. 1977. Hortus Third: 481.
Cannon. 1978. F.Z. 4: 605–607.

vulgare Mill.*

(= *F. officinale* All.,
= *Anethum foeniculum* L.)

Perennial herb, up to 2 m high. Leaves 3- or 4-pinnate with finely divided ultimate segments which are narrowly linear to capillary. Fruit distinctly glaucous grey. *Flowers bright yellow; November and March to June.* Disturbed places. Native to Europe and Asia. *Sutton* 983.

W S C N E

Heteromorpha Cham. & Schtdl.

(s. Afr.: 6 spp.) 5992000

Conrath. 1908. Kew Bull. 1908: 224.
Schlechter & Wolff. 1921. Bot. Jb. 57: 225–226.
Burt Davy. 1932. Fl. Transv. 2: 23, 519–520.
Cannon. 1978. F.Z. 4: 578–581.
Townsend. 1985. Kew Bull. 40: 848–849.

involutrata Conrath

(= *H. glauca* Lemesle)

Subshrub, 0.5–0.7 m high. Lower surface of midrib pilose (sometimes only sparingly so), many hairs here and on margins set on low tubercles. Large foliose bracts generally present beneath main umbel. *Flowers pale yellow; January to March.* Grassland, often near streams. *Codd* 8293.

W S C N E

pubescens Burt Davy

Shrub, 0.5–0.8 m high. Leaves densely pilose over entire venation, reticulate secondary veins as well as pinnate primary veins. *Flowers greenish yellow; September to March.* Grassland on rocky outcrops or hillsides. *Codd* 9476.

W S C N E

transvaalensis H. Wolff

Shrub, up to 500 mm tall, totally glabrous or very rarely abaxial surface of midrib very sparingly pilose. Branching wide and lax. Bracts and bracteoles usually narrow, green. *Flowers yellow-green; December to April.* Rocky outcrops or hillsides. *Van der Schijff* 2179.

W S C N E

trifoliata (Wendl.) Eckl. & Zeyh.

(= *H. arborescens* (Thunb.) Cham. & Schtdl. var. *trifoliata* (Wendl.) Sond.)

Small tree or shrub, up to 3 m high. Leaves almost always pilose along adaxial surface of midrib. Branching less lax. Bracts and bracteoles ± membranous, bracteoles in particular broader. *Flowers pale yellow to yellowish green; September to May.* Montane and riverine woodland, in forest margins and in secondary growth. *Codd* 6907.

W S C N E

Hydrocotyle L. (s. Afr.: 5 spp.) 5893000

Wolff. 1921. Bot. Jb. 57: 220.
Cannon. 1978. F.Z. 4: 557–559.
Burt. 1991. Edinb. J. Bot. 48,2: 215–220.

americana L.

Creeping herb. Leaves reniform with an obvious basal sinus, upper leaf surface glabrous, lower with crisped hairs; margin crenately divided into 5–7 lobes. Inflorescence a simple subcapitate umbel. *Flowers green; November to June.* In or near water. *Scheepers* 376.

W S C N E

schlechteri H. Wolff

Prostrate herb, totally villous. Leaves reniform-orbicular, leaf margin crenate. Fruits suborbicular. Inflorescence capitate; peduncle equalling petioles. Marshy places. *Schlechter* 4388 (type—not seen).

W S C N E

verticillata Thunb.

Creeping herb, glabrous. Leaves shallowly crenately lobed, peltate. Inflorescence an interrupted spike. *Flowers white to greenish yellow; August to February.* In damp places near rivers and in marshes and ditches. *Obermeyer, Schweickerdt & Verdoorn* 200.

W S C N E

Pastinaca L. (s. Afr.: 1 sp.) 6120000

Bailey. 1977. Hortus Third: 826–827.

sativa L.*

(= *P. capensis* Sond.)

Biennial herb, up to 1 m high. Leaves pinnate with 7–9 ovate, toothed or lobed leaflets. *Flowers greenish yellow; September to March.* Disturbed places; along riverbanks, edges of dams and vleis. Native to Europe and Asia. *Codd* 2554.

W S C N E

Peucedanum L. (s. Afr.: 30 spp.) 6116000

Sonder. 1894. F.C. 2: 549, 554–559.
Phillips. 1917. Ann. S. Afr. Mus. 16: 108–109.
Burt Davy. 1932. Fl. Transv. 2: 28, 520.
Arnold. 1978. Bothalia 12,3: 441–443.
Hilliard & Burt. 1982. Notes R. bot. Gdn Edinb. 40,2: 297–298.

caffrum (Meisn.) E. Phillips
(= *Seseli caffrum* Meisn.)

Perennial herb, up to 0,8 m high. Leaves pinnate or bipinnate; leaflets obovate, lobed or pinnatifid; apices of lobes mucronate; cuneate. Umbels up to $\pm$ 15-flowered. Fruit elliptic, 5 ribbed (3 dorsal, 2 lateral); winged. *Flowers white or yellow; December*. Grassland. *Devenish 339*.

W S C N E

capense (Thunb.) Sond. var. **capense**

Shrub, up to 1 m high. Leaves pinnate, bipinnate or subtripinnate; leaflets ovate, oblong, entire. Umbels with many rays. Fruit obtuse at both ends. *Flowers yellow; February to March*. Grassland. *Onderstall 1339*.

W S C N E

magalismsontanum Sond.

(= *P. schlechterianum* H. Wolff)

Perennial herb, 0,8 m high. Leaves bipinnatisect, segments deeply pinnatifid, lobes linear-oblong, acute. *Flowers yellow; October to February*. Grassland. *Scheepers 1448*.

W S C N E

thodei T.H. Arnold

Perennial herb, up to 2 m high, variously scabrid (rarely glabrous). Leaves 3-pinnate, triangular in outline; lobes lanceolate-acuminate, irregularly dentate to lacerate. Lateral wings on fruits poorly developed. *Flowers yellowish green; January*. Commonly along streambanks. *Devenish 986*.

W S C N E

upingtoniae (Schinz) Drude

(= *Lefebvrea upingtoniae* Schinz,
= *P. venosum* Burt Davy)

Perennial herb, up to 2 m high. Leaves 3-nately bipinnate, pinnae ternate or biternate; pinnules lanceolate from cuneate base, serrate, prominently veined beneath. *Flowers greenish yellow; February to April*. In forest. *Meeuse 9804*.

W S C N E

Pimpinella L. (s. Afr.: 7 spp.) 6033000

Wolff. 1927. Pflanzenreich 90: 219–315.
Burt. 1991. Edinb. J. Bot. 48,2: 240–242.

hydrophila H. Wolff

Perennial herb, up to 0,8 m high, glabrous. Leaves trifoliolate. *Flowering December*. Edges of marshes. *Schlechter 3918* (type—not seen).

W S C N E

transvaalensis H. Wolff

Herb, up to 500 mm tall, glabrous or with few minute hairs in inflorescence. Leaves subbipinnatisect. *Flow-*

ers white; November to April. Grassland, near water. *Codd 9539*.

W S C N E

Polemanna Eckl. & Zeyh. (s. Afr.: 3 spp.) 6045000

Hilliard & Burt. 1986. Notes R. bot. Gdn Edinb. 43: 225–226.

simplicior Hilliard & B.L. Burt

Bushy shrub, 3 m high. Leaflets entire or seldom divided; moderately acute. *Flowers yellow; January*. Open mountainsides; rocky streamsides at high altitudes. *Pole-Evans 19654 H*.

W S C N E

Sanicula L. (s. Afr.: 1 sp.) 5918000

Cannon. 1978. F.Z. 4: 565.
Burt. 1991. Edinb. J. Bot. 48,2: 245–246.

elata Buch.-Ham. ex D. Don

(= *S. capensis* (Cham. & Schltdl.) Eckl. & Zeyh.,
= *S. europaea* var. *elata* (D. Don) Boiss.)

Herb, up to 0,8 m high. Leaves palmately to pinnately divided; margins serrate with mucronate tips to the teeth. Fruit densely covered with strongly hooked spines. *Flowers white to yellowish green; November to August*. On mountains, in moist shady situations, often by small streams under forest cover. *Scheepers 591*.

W S C N E

Scandix L. (s. Afr.: 1 sp.) 5939000

Burt Davy. 1932. Fl. Transv. 2: 521.
Burt. 1991. Edinb. J. Bot. 48,2: 246.

pecten-veneris L.*

Annual herb, 200–500 mm tall. Leaves pinnately much divided, densely ciliate on margins. Beak of fruit 40–60 mm long. *Flowers nearly sessile, white*. Weed. Native of Europe and Asia. *Burt Davy, 5590* (not seen).

W S C N E

Sium L. (s. Afr.: 1 sp.) 6038000

Cannon. 1978. F.Z. 4: 598.

repandum Welw. ex Hiern

(= *S. repandum* Welw. ex Hiern var. *latifolium* Burt Davy)

Perennial herb, up to 1,5 m high, glabrous. Leaflet margins with regular serrations. Inflorescence obviously leafy; bracts present. Fruit not strongly dorsiventrally compressed. *Flowers yellowish to greenish white; December to March*. At streamsides and often in standing water. *Gernishuizen 2902*.

W S C N E

Steganotaenia Hochst. (s. Afr.: 1 sp.) 6116010

Cannon. 1978. F.Z. 4: 617–619.

araliacea Hochst.

(= *Peucedanum fraxinifolium* Oliv.,
= *P. araliaceum* (Hochst.) Vathe)

Small deciduous tree or shrub, 2–10 m high. Leaves simply pinnate, densely crowded at end of shoots; leaf-

lets ovate or lanceolate to narrowly lanceolate; apex acute with prolonged stiff mucro; margin regularly serrate, tips of teeth produced as long stiff bristles. *Flowers greenish white to yellow or purplish; August to November.* Open woodland and on riverbanks. *Codd & Dyer 3898* (leaves), *Codd 4414* (flowers).

W S C N E

APOCYNACEAE

Trees, shrubs or woody climbers, with milky or watery latex. Leaves opposite or whorled, entire, without stipules. Flowers regular, often large and fragrant. Petals 5, fused into a tube, twisted in bud. Stamens 5, arising from corolla tube; anthers often arrow-shaped, free or united. Ovary 1-locular or comprising 2 free carpels often united by style. Fruit large and fleshy, or dry and follicular. Seeds often plumed with long, silky hairs.

Key after Codd in F.S.A. 26: 244–245 (1963) and Kupicha in F.Z. 7,2: 395–397 (1985).

- 1a Ovary entire 2
- 1b Ovary of 2 separate or almost separate carpels 5
- 2a Ovary 2-chambered with 1–4, rarely many, ovules in each; shrubs or trees, rarely scandent 3
- 2b Ovary 1-chambered with many ovules; woody climbers or, rarely, shrubs 4
- 3a Unarmed shrubs or trees; inflorescence axillary **Acokanthera**
- 3b Armed shrubs, sometimes scandent; inflorescence terminal or pseudo-axillary **Carissa**
- 4a Inflorescence of elongate, branched, terminal panicles; anthers keeled along back **Ancylobotrys**
- 4b Inflorescence contracted, short and often clustered, terminal or axillary; anthers without keels **Landolphia**
- 5a Leaves opposite or ternate; stems woody or subherbaceous 6
- 5b Leaves alternate or fascicled; plants with succulent stems 12
- 6a Stems subherbaceous, not higher than 1.5 m **Catharanthus**
- 6b Stems woody; shrubs, trees or climbers 7
- 7a Fruit baccate or drupaceous 8
- 7b Fruit follicular 9
- 8a Fruit baccate; many ovules in each carpel **Tabernaemontana**
- 8b Fruit a drupe; 2 ovules in each carpel **Rauvolfia**
- 9a Mericarps shorter than 50 mm, oblong to linear-oblong, somewhat compressed; ovules 2–4 in each carpel; fruit lenticellate **Diplorhynchus**
- 9b Mericarps longer than 80 mm, cylindrical or spindle-shaped to linear 10
- 10a Corolla tube campanulate to broadly funnel-shaped; paired appendages alternating with corolla lobes **Strophanthus**
- 10b Corolla ± salver-shaped 11
- 11a Corolla without appendages in throat; leaves broadly elliptic **Holarrhena**
- 11b Corolla with scales or appendages in throat; scales in corolla throat forming short corona; leaves lanceolate **Wrightia**
- 12a (5) Stipules minute or absent; anthers produced into long hairy appendages **Adenium**
- 12b Stipules transformed into rigid spines; anthers with only a short, terminal appendage **Pachypodium**

Acokanthera G. Don (s. Afr.: 3 spp.) 6558000

Codd. 1963. F.S.A. 26: 246–249.

Kupicha. 1982. Kew Bull. 37,1: 60.

oppositifolia (Lam.) Codd(= *A. venenata* sensu Stapf non G. Don)

Small tree or shrub, 2–4 m high. Leaves ovate-elliptic to oblong or lanceolate, acute or obtuse, secondary and often tertiary nerves distinct. Fruit ovoid, rarely subglobose. *Flowers white, tinged with pink; July to October and in February.* Wooded places, exposed rocky slopes, scrub forest and along watercourses. *Codd 1676.*

W S C N E

rotundata (Codd) Kupicha(= *A. schimperi* (A. DC.) Schweinf. var. *rotundata* Codd)

Small tree or shrub, up to 3 m high. Leaves broadly elliptic to subrotund, often strongly scabrid, obtuse to rounded at apex, secondary nerves rather indistinct. Fruit globose or subglobose. *Flowers white or white tinged with pink; November to March and in June.* Dry wooded places on rocks of granite, sandstone or quartzite. *Botha 1955.*

W S C N E

Adenium Roem. & Schult. (s. Afr.:**4 spp.)****6680000**

Codd. 1963. F.S.A. 26: 279–282.

Plazier. 1980. Meded. LandbHooesch. Wageningen 80,12: 9–13.

multiflorum Klotzsch(= *A. obesum* (Forssk.) Roem. & Schult. var. *multiflorum* (Klotzsch) Codd)

Succulent shrub, 0.6–3.0 m high. Leaves obovate to oblong-obovate, glabrous, 30–80 mm broad. Flowers usually appearing before leaves. Upper, wide part of corolla ± pubescent within. Terminal anther appendages exerted. *Flowers whitish to pale pink with darker pink margin; May to December.* Dry lowveld woodland among rocks or on sandy slopes and flats. *Codd 3007.*

W S C N E

oleifolium Stapf

Small succulent shrub, 120–400 mm tall. Leaves linear-lanceolate to linear-oblong, pubescent, 5–12 mm broad. Flowers appearing with leaves. Upper, wide part of corolla ± pubescent within. Terminal anther appendages reaching to corolla mouth. *Flowers pale pink to red, more intense towards margin; January to March.* Stony ridges, limestone outcrops or loose sand. *Raal 795.*

W S C N E

swazicum Stapf

Small succulent shrub, 0.2–0.7 m high. Leaves 10–30 mm broad, apex acute to rounded, rarely emarginate; secondary nerves indistinct. Upper, wide part of corolla quite glabrous within. Terminal anther appendages short, included. *Flowers pink or mauve to deep reddish purple, usually darker in throat; October and January to April.* Lowveld woodland, usually on sandy, brackish flats. *Codd 5227.*

W S C N E

Ancylotrys Pierre (s. Afr.: 2 spp.) 6562020

Codd. 1963. F.S.A. 26: 260–261.

Kupicha. 1985. F.Z. 7,2: 422.

capensis (Oliv.) Pichon(= *Landolphia capensis* Oliv.)

Scandent shrub, 1–2 m or up to 5 m high. Leaves 25–35 (rarely 45) mm long; secondary nerves spreading at right angles, distinct, 2.5–3.5 mm apart. Corolla tube 6–14 mm long, lobes 11–24 mm long; pubescence on corolla tube rusty red. *Flowers white; August to April.* Dry, bush-covered, rocky situations. *De Winter 379* (flowers), *Leeuwenberg 10890* (fruit).

W S C N E

petersiana (Klotzsch) Pierre(= *Landolphia petersiana* (Klotzsch) Dyer)

Scandent shrub or woody climber. Leaves (rarely 35–) 40–110 mm long; secondary veins slightly oblique, rather indistinct, 3–7 mm apart. Corolla tube 6–14 mm

long, lobes 11–24 mm long; pubescence on corolla tube grey to pale brown. *Flowers white or creamy white; September to November.* Tropical bush and scrub forest. *Codd & Dyer 4592.*

W S C N E

Carissa L. (s. Afr.: 6 spp.)**6559000**

Codd. 1963. F.S.A. 26: 251–258.

Kupicha. 1985. F.Z. 7,2: 398–404.

bispinosa (L.) Desf. ex Brenan subsp. bispinosa

Shrub, up to 3 m high. Spines robust, up to 50 mm long, bifurcate, twice bifurcate or simple. Leaves thickly coriaceous, rarely longer than 30 mm, usually broadly ovate. Flowers 5-merous; corolla lobes 3.5–5.0 mm long, longer than broad, overlapping to the left. *Flowers white; September to March.* Hot, dry situations in bushveld. *Leendertz 3366.*

W S C N E

bispinosa (L.) Desf. ex Brenan subsp. zambesiensis*Kupicha*(= *C. bispinosa* (L.) Desf. ex Brenan var. *acuminata* (E. Mey.) Codd)

Shrub, up to 5 m high. Spines slender, rarely longer than 25 mm, bifurcate. Leaves thin, up to 60 mm long, broadly ovate to ovate-lanceolate. Flowers and corolla as in subsp. *bispinosa*. *Flowers white; September to January.* Dense woodland-like forest margins and scrub forest. *Codd & Dyer 4517.*

W S C N E

edulis Vahl(= *Azima pubescens* Suess.)

Shrub, up to 4 m high. Spines simple. Corolla lobes overlapping to the right. *Flowers white, tinged with purple; August to February.* Bushveld and scrub forest. *Bruce 120.*

W S C N E

tetramera (Sacleux) Stapf

Shrub, up to 3 m high. Spines bifurcate or rarely simple. Flowers 4-merous. Corolla lobes overlapping to the left. *Flowers white, tinged with red; February.* Under-shrub in tropical scrub forest. *Kluge 2596.*

W S C N E

Catharanthus G. Don (s. Afr.: 1 sp.) 6597000

Codd. 1963. F.S.A. 26: 268.

roseus (L.) G. Don*(= *Lochnera rosea* (L.) Rchb. ex Endl.)

Perennial herb, up to 1 m high. Flowers axillary in upper leaves, solitary or paired, subsessile. Fruit of 2 follicular mericarps or 1 by abortion, erect. *Flowers pink or white or white with pink centre; July to June.* Weed of waste places in warm, dry areas. Native to Europe and Asia. *Codd 6536.*

W S C N E

Diplorhynchus Welw. ex Ficalho & Hiern (s. Afr.: 1 sp.) 6589000

Codd. 1963. F.S.A. 26: 265–267.

condylocarpon (Müll. Arg.) Pichon

Small tree or shrub, up to 7 m high. Branchlets minutely greyish tomentose when young, eventually glabrescent. Fruit of 2 mericarps, follicular, spreading widely at $\pm 180^\circ$; leathery to woody with lenticels. *Flowers white to yellow; October to January*. Warm, dry usually rocky situations. *Acocks 13905*.

W S C N E

Holarrhena R. Br. (s. Afr.: 1 sp.) 6582000

Codd. 1963. F.S.A. 26: 263–264.

pubescens (Buch.-Ham.) Wall.

Small tree or shrub, up to 4 m high. Young branches $\pm$ pubescent, later glabrescent; dotted with lenticels. Leaves sparingly to densely pubescent; petioles with a few glands at base on inner surface. Fruit of 2 mericarps, follicular, 200–280 mm long. *Flowers white; November to February*. Wooded quartzite ridges and sandy flats at low altitudes. *Van der Schijff 3337* (flowers), *Codd 4236* (fruit).

W S C N E

Landolphia P. Beauv. (s. Afr.: 1 sp.) 6562000

Codd. 1963. F.S.A. 26: 258–260.

kirkii Dyer

Scandent shrub or woody climber. Corolla tube 3–5 mm long, lobes 4–6 mm long. *Flowers white; September to January*. In tropical bush and forest. *Codd & Dyer 4500* (flowers) & 4557 (fruit).

W S C N E

Pachypodium Lindl. (s. Afr.: 5 spp.) 6681000

Codd. 1963. F.S.A. 26: 283–287.

saundersii N.E. Br.

Succulent shrub, up to 1.5 m high. Leaves obovate-elliptic, $\pm$ twice as long as broad, wider than 10 mm, sparingly pubescent on midrib below and margin fimbriate, otherwise glabrous. Corolla salver-shaped; tube subcylindrical, dilated at insertion of stamens. *Flowers white suffused with reddish purple under corolla lobes and on tube; January to June*. Among rocks, often in rock crevices, in relatively dry, lowveld woodland. *Van der Schijff 2530*.

W S C N E

Rauvolfia L. (s. Afr.: 1 sp.) 6619000

Codd. 1963. F.S.A. 26: 275–276.

caffra Sond.

(= *R. natalensis* Sond.)

Tree, 7–16 m high. Leaves in whorls of 3–5, 120–280 mm long. Fruit drupaceous, subglobose to obovoid. *Flowers white; July to October and February to March*. Forest and wooded streambanks, usually near water. *Van der Schijff 423* (flowers), *Codd 5688* (fruit).

W S C N E

Strophanthus DC. (s. Afr.: 6 spp.) 6688000

Codd. 1963. F.S.A. 26: 290–295.

gerrardii Stapf

Shrub or slender climber. Leaves glabrous, 10–20 mm broad. Flower parts glabrous. Calyx lobes shorter than 10 mm and 1–2 mm broad, linear-subulate, recurved. Corolla lobes spreading, 30–50 mm long. Plumose awn on seed with naked stalk 20–30 mm long. *Flowers with pink to mauve tube, lobes yellow; September to October and in May*. Dry woodland, often on rocky places. *Codd 6099*.

W S C N E

kombe Oliv.

Shrub or woody climber. Leaves hispid-tomentose, large, usually broader than 45 mm. Cylindrical basal part of corolla tube $\pm$ as long as upper, campanulate to funnel-shaped part. *Flowers cream to yellowish with red or purple markings; October*. Dry lowveld woodland, often on rocky situations. *Van der Schijff 1019* (flower), *Codd 5970* (fruit).

W S C N E

luteolus Codd

Scandent shrub or climber, 3–8 m high. Flower parts and branchlets pubescent. Calyx lobes 10–13 mm long and 2–3 mm broad. Corolla lobes pendulous, 50–80 mm long. Plumose awn on seed with naked stalk 20–30 mm long. *Flowers yellowish with purple markings in throat and on outside of tube; September to December*. Dry wooded slopes. *Hardy & De Villiers 6097*.

W S C N E

petersianus Klotzsch

(= *S. grandiflorus* (N.E. Br.) Gilg)

Shrub or climber. Flower parts and branchlets glabrous. Calyx lobes 10–15 mm long and 2–3 mm broad. Corolla lobes pendulous, 60–140 mm long. Plumose awn on seed with naked stalk 20–30 mm long. *Flowers whitish to cream within tube and on inner sides of lobes, reddish purple without; October to January*. Lowveld woodland, usually on dry rocky situations. *Codd & Dyer 4543* (flower), *Venter 9922* (fruit).

W S C N E

speciosus (Ward & Harv.) Reber

Scandent shrub or woody climber, up to 10 m high. Leaves narrowly elliptic to oblanceolate, often ternate. Infra-axillary glands scale-like, overlapping vertically like tiles. Plumose awn on seed sessile. *Flowers yellow*

with dull red mark at base of each corolla lobe; August to November. Forest margins and scrub forest. *De Winter 7791* (flower), *Obermeyer 31865* (fruit).

W S C N E

Tabernaemontana *L.* (s. Afr.: 2 spp.) 6603000
Codd. 1963. F.S.A. 26: 269–270.

elegans *Stapf*
(= *Conopharyngia elegans* (Stapf) Stapf)

Small tree or shrub, up to 8 m high. Corolla tube up to 1,5 mm in diameter. Calyx 1,5–2,0 mm long. Fruit warty. *Flowers white; October to May*. Riverine woodland. *Van der Schijff 3991* (flowers), *Codd 4220* (fruit).

W S C N E

ventricosa *Hochst. ex A. DC.*
(= *Conopharyngia ventricosa* (Hochst. ex DC.) Stapf)

Tree, 4–8 m high. Corolla tube up to 3,5 mm in diameter. Calyx 4–5 mm long. Fruit ± smooth or wrinkled,

not warty. *Flowers white; November*. Dense shade. *Durrant 2* (flowers), *Buitendag 1157* (fruit).

W S C N E

Wrightia *R. Br.* (s. Afr.: 1 sp.) 6689000
Codd. 1963. F.S.A. 26: 296.

natalensis *Stapf*

Shrub or tree, up to 15 m high (normally 4–8 m). Branches rusty pubescent when young, soon glabrous. Stamens exserted. Fruit of 2 follicular mericarps, 200–260 mm long. *Flowers yellowish; October and November*. Scrub forest and dry bushveld, often on hillsides. *Van Vuuren 1626* (flowers), *De Winter 7746* (fruit).

W S C N E

AQUIFOLIACEAE

Trees or shrubs. Leaves alternate, without stipules. Flowers regular, unisexual; disc absent. Petals usually 4 and just united at base. Stamens 4 or 5. Ovary superior. Fruit a berry.

Ilex *L.* (s. Afr.: 1 sp.) 4614000
Mendes. 1966. F.Z. 2: 353–355.
Andrews. 1994. *Bothalia* 24: 163–166.

mitis (*L.*) *Radlk. var. mitis*
(= *I. capensis* Sond.)

Tree or shrub, up to 30 m high. Leaves narrowly elliptic to lanceolate. Inflorescence axillary, solitary or con-

gested. Flowers pedicellate. Fruit of (4)5 or 6(7) pyrenes, ± 7 mm in diameter, subglobose, red. *Flowers white; October to December*. Riverbanks, streambeds, evergreen forests. *Hemm 29, 29A*.

W S C N E

ARALIACEAE

Trees or shrubs. Stems solid. Leaves alternate, usually large, palmately or pinnately lobed or compound; stipules present, often fused to base of petiole. Inflorescence an umbel. Flowers regular, often greenish. Petals 5, free. Stamens 5–10. Ovary inferior. Fruit a berry or drupe.

Key after Dyer, Gen. 1: 413 (1975).

- 1a Fruit flattened, membranous, with distinct, longitudinal veins; leaves digitately lobed **Secmannaralia**
- 1b Fruit somewhat fleshy, leaves digitately divided or twice divided, sometimes palmatifid **2**
- 2a Flowers umbellate, in panicles **Schefflera**
- 2b Flowers in spikes or racemes **Cussonia**

Cussonia *Thunb.* (s. Afr.: 10 spp.) 5872000
Sonder. 1894. F.C. 2: 568–569.
Reyncke. 1984. S. Afr. J. Bot. 3,6: 369–373.
Reyncke & Kok. 1987. S. Afr. J. Bot. 53,5: 317–322.
De Winter. 1991. Flower. Pl. Afr. 51: t. 2024.

natalensis *Sond.*

Tree, up to 11 m high. Leaves simple, palmati-partite; leaflets serrate, lanceolate-acuminate. *Flowers green; December to July*. Rocky koppies. *Codd 7764*.

W S C N E

paniculata Eckl. & Zeyh. subsp. *sinuata* (Reyneke & Kok) De Winter
(= *C. paniculata* Eckl. & Zeyh. var. *sinuata* Reyneke & Kok)

Tree, up to 5 m high. Leaves mono-digitately compound and glaucous; margins of primary leaflets sinuate. *Flowers in umbellate racemose spikes; green or yellow-green; January to July.* Hillsides and grassland. *De Winter 8744.*

W S C N E

spicata Thunb.

Tree, 6–18 m high. Leaves bi- or multidigitately compound and dark green; primary petiolule winged. *Flowers in simple spikes; green or creamy; February to August.* In forests or savanna. *Jacobsen 2045.*

W S C N E

transvaalensis Reyneke

Evergreen tree, up to 5 m high. Leaves multidigitately compound and glaucous; primary leaflets particularly compound; leaflets without prominent midrib; margins entire. Stipellae absent on articulations. Single hypso-phyll subtending each flower. *Flowers green; January to May.* Rocky koppies and mountain ranges. *Codd 6485.*

W S C N E

Schefflera J.R. & G. Forst. (s. Afr.:
1 sp.)

5852000

Cannon. 1978. F.Z. 4: 624–625.

umbellifera (Sond.) Baill.
(= *Cussonia umbellifera* Sond.)

Tree, up to 15 m high. Leaves palmately compound. Inflorescence a panicle complex of compound umbels. *Flowers pedunculate; whitish to greenish; February to April.* In mountain forest. *Scheepers 277.*

W S C N E

Seemannaralia Vig. (s. Afr.: 1 sp.) 5872010

Burt & Dickinson. 1975. Notes R. bot. Gdn Edinb. 33: 449.

gerrardii (Seem.) Harms
(= *Cussonia gerrardii* Seem.)

Deciduous tree, up to 15 m high. Leaves alternate, exstipulate, petiolate; lamina palmately lobed; lobes acute, sharply toothed. *Flowers green; March and April.* Forest and forest margins; hillsides in grassland. *Fourie 2750.*

W S C N E

ASCLEPIADACEAE

Herbs or shrublets, sometimes twining or succulent; milky or watery latex present. Leaves opposite, without stipules. Flowers regular, with a complex structure, usually in umbels. Petals united. Stamens $\pm$ concealed; filaments joined into a tube; anthers attached to style, with pollen grains united into waxy masses (pollinia). Corona (crown-like appendages) present on central column, which is made up of united stamens and carpels. Ovary comprising 2 carpels, free for much of their length; stigma stalkless, disc-like. Fruits inflated follicles, often in divergent pairs. Seeds with coma of silky hairs.

Key after Dyer, Gen. 1: 474–478 (1975), Leach in Excelsa Tax. Ser. 1: 3 (1978), 2: 1–68 (1980), Kupicha in Kew Bull. 38: 599–672 (1984), Leach in Excelsa Tax. Ser. 4: 1–8 (1988), Gilbert in Bradleya 8: 9 (1990), Nicholas & Goyder in Bothalia 22: 23–35 (1992).

- 1a Pollen masses 2 in each anther theca, erect-incumbent, minute, sometimes 2 masses combined with longitudinal suture between; pollen carriers minute, rather soft and pale-coloured; anthers with fimbriate appendages; corona of 5 simple lobes $\pm$ adnate to staminal column Secamone
- 1b Pollen masses solitary in each anther theca, attached in pairs to dark, horny (rarely pale) pollen carrier by 2 caudicles, or sessile 2
- 2a Pollen masses pendulous in anther thecae, usually opaque 3
- 2b Pollen masses erect, ascending or horizontal in anther thecae 22
- 3a Corona absent, corolla with 5 scales attached at or below middle of tube Araujia
- 3b Corona conspicuous 4
- 4a Corona of 5 broad, simple lobes seated at sinuses of corolla tube; corolla tube globose-campanulate or hemispherical with spreading lobes; tuberous-rooted herbs Parapodium
- 4b Corona arising from near base of corolla tube or from staminal column 5
- 5a Stems erect, decumbent or prostrate, mainly herbaceous; rootstock often tuberous 6
- 5b Stems twining or rambling 18
- 6a Corona lobes united into a tube (at least at base), truncate, toothed or lobed at top Cynanchum
- 6b Corona of 5 distinct, free lobes in 1 series, sometimes outer corona represented by lobules, teeth or (in *Periglossum*) by filiform processes alternating with main lobes 7
- 7a Corona lobes fleshy, $\pm$ as thick as broad 8
- 7b Corona lobes dorsally flattened or laterally compressed 10

- 8a Corona lobes with 1 or 2 appendages on inner face **Miraglossum**
 8b Corona lobes without keel or process on inner surface 9
- 9a Apex of corona lobes rounded to apiculate **Xysmalobium**
 9b Apex of corona lobes extended into long erect process **Stenostelma**
- 10a Corona lobes dorsally flattened, sometimes keeled 11
 10b Corona lobes laterally compressed with sides folded together at least in part, forming a cavity (cucullate or complicate), with or without processes within 17
- 11a Corona lobes spreading horizontally or curving outwards from base, usually with keels on inner face, usually fairly robust perennials **Pachycarpus**
 11b Corona lobes erect from base 12
- 12a Corona lobes deeply trifid or quadrate with square shoulders, with an incurved mid-lobe and incurved margins at base ascending column as narrow wings; usually single stemmed **Woodia**
 12b Corona lobes $\pm$ spatulate or lanceolate, sometimes produced into a point, usually keeled or with processes on inner face 13
- 13a Flowers in sessile or pedunculate umbels; corona lobes often produced into subulate or filiform apex, usually with 2 keels and frequently with 1 or 2 appendages on inner face 14
 13b Flowers in dense, globose, pedunculate heads; corolla lobes suberect, corona lobes spatulate or hastately subspatulate, usually with 2 keels capped by transverse ridge or tubercle on inner face 16
- 14a Inflorescence along whole length of stem, sessile **Aspidoglossum**
 14b Inflorescence pedunculate, rarely sessile 15
- 15a Corolla lobes flat, cucullate or replicate; without corona lobe sinuses; pollinia obtriangular (broadest near apex), reniform or sausage-shaped **Schizoglossum**
 15b Corolla catelliform or reflexed with lobe apices ascending; with distinct corona lobe sinuses; pollinia semicircular to hemiovoid or clavate **Aspidonepsis**
- 16a Corona lobes hastately subspatulate; marsh-loving **Cordylogyne**
 16b Corona lobes spatulate; slender, grassland herbs **Periglossum**
- 17a (10) Axils of leaves with minute bristles **Kanahia**
 17b Axils of leaves without bristles **Asclepias**
- 18a (5) Corona in 1 series 19
 18b Corona in 2 series 21
- 19a Corona annular, cup-shaped or tubular and truncate or toothed at apex, or sometimes divided nearly or quite to base into 5 dorsally flattened, entire or toothed lobes, with or without processes within **Cynanchum**
 19b Corona of 5 free variably shaped lobes or tubercles 20
- 20a Corona lobes obconic or slipper- or trumpet-shaped, with infolded margins and inward directed horn **Pentarrhinum**
 20b Corona of 5 tubercles adnate to or radiating from staminal column, or of free, dorsally flattened lobes; pollen masses sometimes subhorizontal **Tylophora**
- 21a Corolla with little or no tube and spreading lobes; outer corona $\pm$ cup-shaped, truncate or shortly lobed; inner corona lobes 5, laterally compressed or keeled; leafless, somewhat fleshy shrublets or scramblers **Sarcostemma**
 21b Corolla with campanulate or cylindrical tube and spreading lobes; outer corona annular, shortly 5-lobed; inner corona lobes 5, with incurved, subulate, apical horn and spreading or deflexed, basal spur; leafy, perennial twiners **Pergularia**
- 22a (2) Pollen masses erect in anther thecae, opaque and usually not very minute 23
 22b Pollen masses erect, ascending or horizontal in anther cells, pellucid along inner margin or at apex 28
- 23a Corona of 5 narrow, grooved lobes on corolla tube adnate up to its mouth, incurved at tips, twining shrubs **Gymnema**
 23b Corona arising at base of or from staminal column 24
- 24a Corona tubular, arising at angles between staminal column and base of corolla, lobed or toothed at apex, with 1 or 2 superposed series of teeth or filiform processes and 5 pairs of wing-like keels within tube **Fockea**
 24b Corona of distinct lobes, or small tubercles on staminal column 25
- 25a Anther appendages small or obsolete 26
 25b Anther appendages elongate, membranous, incumbent on style-apex or applied to side of conical tip or beak 27
- 26a Corolla saucer-shaped, with broadly campanulate tube, crimson or black in colour **Sphaerocodon**
 26b Corolla almost flat, with obsolete tube and usually slender lobes, not crimson or black **Tylophora**
- 27a Corolla with short, campanulate base; corona lobes with free margins or tips **Dregea**
 27b Corolla with tubular base constricted above; corona lobes adnate to staminal column, free above **Telosma**
- 28a (22) Stem herbaceous or somewhat fleshy, erect, prostrate or twining, with well-developed leaves or sometimes leafless and elongate, not angled 29
 28b Stem fleshy, (3)4-many-angled; mostly dwarf, leafless with rudimentary leaves occurring as scars, points or prickles along angles. 36
- 29a Corona lobes in 1 series, on or below backs of anthers, not connected at base 30
 29b Corona lobes in 2 or 3 series or falsely in 1 series of 3-fid lobes; outer series sometimes reduced to small pouches or slits between inner series opposite anthers 33
- 30a Corona of broad, bifid lobes with long, linear, filiform appendage on inner face or dorsal part of lobe, short and subulate, appearing to arise from back of long, linear-spatulate, inner part **Anisotoma**
 30b Corona lobes without appendages from inner face 31
- 31a Corolla tube obsolete; corolla lobes long, slender and reflexed against pedicel, slender herbs with tuber **Macropetalum**
 31b Corolla tube campanulate or elongate 32

- 32a Corolla tube shortly campanulate or globose-campanulate; flowers small, in pedunculate, umbel-like clusters, slender herbs with fusiform roots *Sisyranthus*
- 32b Corolla tube elongate, $\pm$ inflated at base; prostrate herbs or shrubby *Orthanthera*
- 33a (29) Corolla tube 2 to several times as long as its diameter at middle, often inflated at base 34
- 33b Corolla tube $\pm$ campanulate to nearly flat or obsolete, very rarely slightly inflated at base, less than twice as long as its diameter at middle 35
- 34a Flowers in branching cymes or panicles with few to many clusters scattered along its branches, or clusters arranged racemously along single peduncle, or sessile at nodes *Riocreuxia*
- 34b Flowers solitary to many in clusters or umbel-like cymes or occasionally with pairs of flowers or fascicles racemously scattered along peduncle *Ceropegia*
- 35a Corolla tube mainly campanulate or saucer-shaped or expanded nearly flat, rarely shortly cylindrical; lobes free or united *Brachystelma*
- 35b Corolla tube almost obsolete, with linear, linear-spatulate or sometimes filiform lobes; slender, erect herbs with tubers *Tenaris*
- 36a (28) Corolla lobes with small, spreading, intermediate lobes or points in sinuses between lobes; corona sessile, partially adherent to corolla base; stems glabrous, stipulate *Huernia*
- 36b Corolla usually without intermediate, spreading points at sinuses 37
- 37a Stems (6)7-many-angled, with cylindrical outline; the angles often tuberculate or tessellate, stem tubercles tipped with 3 bristles or with a single, 3-lobed bristle; corolla long or shortly bell-shaped *Tavaresia*
- 37b Stems 4 or 5(6)-angled 38
- 38a Corona hairy; stems trailing, rooting adventitiously; tubercle teeth small, estipulate, flowers relatively large, eciliate, with an annulus *Orbeanthus*
- 38b Corona glabrous 39
- 39a Corolla with an annulus or disc 40
- 39b Corolla without an annulus or disc 43
- 40a Corona simple, connate into basin-shaped tube, 5-lobed, lobes oblong, overtopping staminal column *Huerniopsis*
- 40b Corona biseriata 41
- 41a Inflorescence a cyme of successively opening flowers, often reduced to a sessile cluster, produced from upper part of stems, often subapically; corolla small (less than 30 mm in diameter), varying in form from deeply divided with linear-revolute lobes to deeply tubular with erect lobes, rigidly fleshy *Pachycymbium*
- 41b Inflorescence a few-flowered cyme, from near base to middle of stem 42
- 42a Corolla deeply 5-lobed with strongly replicate margins; inner corona lobes $\pm$ turgid, with swollen bases and inner face somewhat incumbent on anthers, outer corona flat and disc-like or occasionally slightly 5- (or 10)-angled *Duvalia*
- 42b Corolla infrequently bowl-shaped or campanulate, mostly rugulose or verrucose, mostly ciliate; corona with 10 lobes in 2 alternating series or outer series absent in subsection *Carentilobae*, mostly shortly stipulate; inflorescence a cyme of successively opening flowers, developed from near base of stem, corolla with an annulus *Orbea*
- 43a Plants mostly with soft simple hairs, rarely glabrous *Stapelia*
- 43b Plants glabrous 44
- 44a Plants with stipules; corolla large (usually more than 30 mm in diameter), deeply lobed, rotate, surface finely granulate or granulate-rugulose, ciliate, without an annulus; inflorescence a pseudo-umbel of $\pm$ simultaneously opening flowers *Orbeopsis*
- 44b Stems stipulate; inflorescence pedunculate, developing randomly from sides of stems (mostly towards base); corolla valvate, rotate or campanulate, glabrous or sometimes partly minutely stiffly pubescent, mostly ciliate *Tridentea*

Anisotoma Fenzl (s. Afr.: 2 spp.) 6868000

Brown. 1909. F.C. 4,1: 866–867.

pedunculata N.E. Br.

Prostrate, perennial herb. Leaves cordate-ovate to cordate-orbicular. Corona lobes oblong or lanceolate, entire or denticulate, with puberulous, linear-lanceolate, acute or bifid appendage. *Flowers brown and white; October to January*. Grassland. Kluge 1424.

W S C N E

Araujia Brot. (s. Afr.: 1 sp.) 6771000

Brotero. 1818. Trans. Linn. Soc. Lond. 12: 62.

Henderson & Anderson. 1966. Common weeds in South Africa: 238–239.

sericifera Brot.*

Subwoody climber. Leaves ovate; base truncate, apex acuminate; lower surface white with short dense pubes-

cence. Fruit large spongy capsule, up to 120 mm long; dehiscing down one side. *Flowers cream; December to April*. Disturbed places. Native to South America. Gerstner 6518 (flowers), Voorendyk 26 (fruit).

W S C N E

Asclepias L. (s. Afr.: 65 spp.) 6791000

Brown. 1909. F.C. 4,1: 664–714.

Verdoorn. 1924. Kew Bull. 1924: 258.

Nicholas. 1982. M.Sc. thesis, Univ. of Natal, Pietermaritzburg.

adscendens (Schltr.) Schltr.

Perennial herb, 100–200 mm tall. Leaves 6–7 times as long as broad, linear-lanceolate to ovate. Umbels solitary and terminal, 12–25-flowered. Peduncles 15–65 mm long. Corolla lobes reflexed or reflexed-spreading, with upcurved tips, glabrous inside or minutely puberulous at base. *Flowers purplish; August to December*. Grassland. Onderstall 875.

W S C N E

affinis (Schltr.) Schltr.

Perennial decumbent herb. Leaves 6–7 times as long as broad, ovate to ovate-lanceolate. Umbels terminal, solitary, 16–40-flowered. Peduncles 25–95 mm long, longer than leaves subtending them. Corolla lobes reflexed or reflexed-spreading with upcurved tips, glabrous inside. *Flowers cream, yellow or pinkish; November to February.* Grassland. Codd & De Winter 3249.

W S C N E

albans (E. Mey.) Schltr.

Perennial herb, 250–500 mm tall. Leaves 6–7 times as long as broad, ovate to ovate-lanceolate, subcordate to broadly rounded at base. Umbels terminal, solitary, 15–30-flowered. Peduncles 40–100 mm long. Corolla lobes reflexed, glabrous inside. *Flowers white or light purple; December to January.* Grassland. Bradfield 359.

W S C N E

aurea (Schltr.) Schltr.

Perennial herb, 145–500 mm tall. Leaves 9–10 times as long as broad, linear, glabrous. Umbels axillary and terminal, 4-flowered, rarely 5–8. Peduncles 44–140 mm long. Corolla lobes reflexed or spreading, canescent inside. *Flowers yellow; corona white, yellow or purple with white sides; August to May.* Grassy slopes on stony hillsides. Stalmans 198.

W S C N E

brevicuspis (E. Mey.) Schltr.

Perennial herb, 150–300 mm tall. Leaves 9–10 times as long as broad, linear. Corolla lobes spreading, canescent inside. Corona lobes erect, shorter than to slightly exceeding staminal column, cucullate part of corona lobes 2–3 times as long as broad. *Flowers dirty white to green or mauve; corona green; December.* Grassland. Pott 4902.

W S C N E

brevipes (Schltr.) Schltr.

Perennial decumbent herb. Leaves 9–10 times as long as broad, linear, scabrous. Umbels terminal and axillary, 4-flowered. Peduncle 10–48 mm long. Corolla lobes spreading, canescent inside, pubescent outside. *Flowers yellow-brown tinted white or green; corona reddish brown, purple or white; September to December.* Burnt veld on hillsides. Meeuse 9346.

W S C N E

burchellii Schltr.

Perennial herb, 0.6–1.2 m high. Young parts of stem, peduncles, pedicels and outside of corolla densely white tomentose. Leaves 9–10 times as long as broad, linear. Umbels several, racemosely arranged, 3–7-flowered. Corolla lobes reflexed, glabrous inside. Corona lobes D-shaped, without teeth. *Flowers white, cream or light yellow; October to June.* Abundant, often on disturbed sites. Van Wyk, Dahlgren & Kok 5454.

W S C N E

crassinervis N.E. Br.

Perennial herb, 130–280 mm tall. Leaves 9–10 times as long as broad, linear. Umbels 2 or 3, terminal, 4–6-flowered, umbels not exceeding subtending leaves. Corolla lobes reflexed-spreading; glabrous or with a few hairs at tips on back. *Flowers white or greenish white, dark purple-brown on back; corona dark purple-brown with white sides; November to January.* Grassland. Acocks 12307.

W S C N E

crispa P.J. Bergius

Perennial herb, 150–400 mm tall. Leaves crisped-undulate, linear to lanceolate, truncate, rounded or cuneate at base; scabrous or pubescent. Umbels solitary, terminal or 2–4 and racemosely arranged; pedunculate, 7–40-flowered. Corolla lobes reflexed, glabrous on both sides or pubescent on outside. *Flowers dull greenish or purplish tinted inside, brownish purple outside; corona greenish or greenish buff with dark purple stripe down middle of back; September.* Pole Evans H15805.

W S C N E

cucullata (Schltr.) Schltr.

Erect to decumbent perennial herb. Leaves 9–10 times as long as broad, linear to narrowly lanceolate. Corolla lobes spreading with tips curving up; scabrous to pubescent outside, canescent inside. Corona lobes erect, shorter than to slightly exceeding staminal column, cucullate part of corona lobes ± as long as broad. *Flowers purple, off-white, white or mauve to grey; September to December.* Open mountain grasslands. Codd & De Winter 3133.

W S C N E

cultriformis Harv. ex Schltr.

Perennial herb, 150–300 mm tall. Leaves oblong, lanceolate or ovate-lanceolate. Corolla lobes ascending-spreading, pubescent outside, pubescent to densely white-hairy at tips and along margins, glabrous inside. Corona lobes with compressed erect process or horn within cavity. *Flowers green or sometimes dark purple-brown; corona white with violet spot on back near apex and violet at base; December to February.* Grassland. Theron 2453.

W S C N E

decipiens N.E. Br.

Perennial herb, 0.6–0.9 m high. Young parts of stem, peduncles and pedicels densely white tomentose. Leaves 9–10 times as long as broad, linear. Corolla lobes reflexed, ciliate on one or both margins. Corona lobes with backwardly directed falcate teeth at inner apical angles. *Flowers white or pale yellowish tinted purplish outside; June to March.* Rocky outcrops, sandy soil, often disturbed places e.g. roadsides. Onderstall 1156.

W S C N E

densiflora N.E. Br.

Perennial herb, 300–500 mm tall. Leaves 9–10 times as long as broad, linear-lanceolate or lanceolate, mostly broadest at base, scabrous or harshly pubescent. Umbels solitary, terminal, 25–30 mm in diameter, 12–25-flowered, peduncles 90–175 mm long. Corolla lobes reflexed, glabrous. *Flowers white, tinted with dull purple outside; corona yellowish; November to February.* Grassland. *Bredenkamp & Van Vuuren 191.*

W S C N E

dissona N.E. Br.

Perennial herb, 190–280 mm tall. Leaves 9–10 times as long as broad, lanceolate to linear. Umbels solitary, terminal, 4–8-flowered. Corolla lobes spreading or slightly reflexed, glabrous or with a few hairs at tips on back outside, minutely papillate-puberulous inside. Dorsal apex of corona lobes distinctly produced above apex of inflexed sides. *Flowers mauve; October to December.* Moist soil near rivers or on grassy hillsides. *Galpin 13101.*

W S C N E

dregeana Schltr. var. **dregeana**

Perennial herb, 80–380 mm tall. Leaves 6–7 times as long as broad, linear-oblong, lanceolate to ovate-oblong, broadest at base. Umbels 2–6, lateral and terminal, 5–10-flowered; peduncles 15–70 mm long; pubescence on umbels very short and close, often rust-coloured or tawny. Corolla lobes rotately spreading or somewhat reflexed, glabrous inside. *Flowers green; November and May.* Grassland. *Sutton 854.*

W S C N E

eminens (Harv.) Schltr.

Perennial decumbent herb. Leaves 9–10 times as long as broad, lanceolate, base hastate to auriculate. Umbels solitary, terminal, 6- or 7-flowered. Corolla lobes reflexed, glabrous outside, canescent to puberulent inside. Corona lobes 6–7 times as long as broad, when viewed from the side, overtopping staminal column by half their length. *Flowers green, greenish pink, greenish white to white; July and October to April.* Open grassland, or on rocky hillsides. *Hanekom 2002.*

W S C N E

fallax (Schltr.) Schltr.

Perennial herb, 150–300 mm tall. Leaves 6–7 times as long as broad, lanceolate with truncate to cuneate-hastate base. Umbels solitary and terminal or 2, the lower lateral, 12–15-flowered. Peduncles 50–120 mm long. Corolla lobes reflexed with upcurved tips, glabrous. *Flowers white tinted with purple on back; corona greenish yellow at top, dark violet-brown on back and lower part; September to January.* Grassland. *Van Rooyen 2128.*

W S C N E

fruticosa L.

Shrub, 0.9–2.0 m high. Leaves 9–10 times as long as broad, linear or linear-lanceolate. Umbels several,

racemously arranged, 6–10-flowered. Corolla lobes reflexed, glabrous. Corona lobes with long backwardly directed falcate teeth at inner apical angles. Follicles ovoid or lanceolate, tapering into a beak or shortly acute. *Flowers white, cream, light yellow or light greenish; September to April.* Abundant, often disturbed places and near water. *Leendertz 11116.*

W S C N E

gibba (E. Mey.) Schltr. var. **gibba**

Perennial herb, 14–300 mm tall. Leaves 9–10 times as long as broad, linear, base auriculate or hastate. Umbels solitary, terminal, 4–10-flowered. Corolla lobes spreading to reflexed, glabrous outside, canescent inside. Corona lobes distinctly gibbous or curved on back with an erect subulate point at their dorsal apex. *Flowers grey-mauve, green-mauve, silvery grey or greenish white tinted dull purple; October to February.* Grassland. *Codd 4709.*

W S C N E

gibba (E. Mey.) Schltr. var. **media** N.E. Br.

Perennial herb, 120–310 mm tall. Umbels, corolla and leaves as in var. *gibba*. Corona lobes curved but scarcely gibbous on back and without an oblique fold or keel upon sides. *Flowers white, grey or green; September to January and in April.* Grassland. *Van Wyk 759.*

W S C N E

glaucophylla (Schltr.) Schltr.

Perennial herb, 0.3–0.6 m high. Leaves 6–7 times as long as broad, elongate-ovate, cordate at base, glaucous, bluish green. Umbels several, racemously arranged, 7–15-flowered. Corolla lobes reflexed, minutely puberulous inside, glabrous outside. *Flowers greenish; corona yellowish brown; October to December.* Grassland. *Van Rooyen 2038.*

W S C N E

macropus (Schltr.) Schltr.

Decumbent, perennial herb. Leaves 6–7 times as long as broad, ovate, ovate-oblong, rounded or cordate at base, scabrous or subhispid. Umbels solitary, terminal, 12–30-flowered, peduncles 80–150 mm long. Corolla lobes reflexed with upcurved tips, glabrous. Corona lobes 4.5–5.0 mm long. *Flowers yellowish green with purple-brown veins at tips; corona yellow with back and basal part brownish purple; January.* Grassland. *Collins 6342.*

W S C N E

meliodora (Schltr.) Schltr.

Perennial herb, 50–130 mm tall. Leaves 6–7 times as long as broad, lanceolate, subtruncate, subcordate or subhastate at base, pubescent. Umbels 2 or 3, subcorymbose, 7–15-flowered. Peduncles much shorter than leaves at their base. Corolla lobes reflexed, glabrous. Corona lobes 3–4 mm long. *Flowers whitish, dull purple-tinted on back; September to March.* Mountain sides. *Barnard 285.*

W S C N E

meyeriana (Schltr.) Schltr.

Perennial herb, 30–200 mm tall, branching into very numerous stems at base. Leaves 9–10 times as long as broad, linear, scabrous. Umbels more than 2, 4-flowered, peduncles 7–38 mm long. Corolla lobes reflexed, glabrous or canescent outside. *Flowers pink and white, purple and white, greenish brown, pink, green or cream; September to January.* Open, sparsely covered grassy areas. *Haenke 1624.*

W S C N E

monticola N.E. Br.

Perennial decumbent herb. Leaves 6–7 times as long as broad, ovate or ovate-lanceolate, subcordate, subtruncate or rounded at base. Umbels lateral and terminal, 6–12-flowered. Peduncles as long as or longer than leaves at their base. Corolla lobes reflexed, glabrous outside, minutely papillate-puberulous inside. *Flowers brownish green; November.* Grassland. *Clarke 1470.*

W S C N E

multicaulis (E. Mey.) Schltr.

Perennial herb, 100–150 mm tall. Leaves 6–7 times as long as broad, base truncate, subsagittate or subhastate, glabrous above. Umbels solitary, rarely 2, terminal, 6–9-flowered. Corolla lobes reflexed, glabrous outside, inside minutely papillose. *Flowers grey-pink or mauve; corona yellow; October to December.* Grassland. *Leendertz 9601.*

W S C N E

nana I. Verd.

Perennial herb, up to 110 mm tall. Leaves linear, 9–10 times as long as broad. Umbels lateral and terminal, 4-flowered. Corolla lobes reflexed, glabrous outside, canescent inside. Corona lobes with distal ends lower than small erect, dentate proximal appendages. *Flowers white; October.* Grassland. *Galpin 8148.*

W S C N E

physocarpa (E. Mey.) Schltr.

Perennial herb, up to 1.6 m high. Leaves 9–10 times as long as broad, linear-lanceolate or lanceolate. Umbels several, racemously arranged, 5–10-flowered. Corolla lobes reflexed, glabrous. Corona lobes with erect obliquely subtruncate or shortly falcate teeth at inner apical angles. Follicles subglobose, obtuse or apiculate. *Flowers white or cream; September to March and in June.* Grassland, often near water. *Venda Herb. (N.E. Netshiungani) 1079.*

W S C N E

rivularis (Schltr.) Schltr.

Perennial herb, up to 1.2 m high. Leaves 9–10 times as long as broad, linear to narrowly lanceolate, glabrous, in whorls of 3 or 4. Umbels numerous, lateral, racemously arranged, 8–25-flowered. Corolla lobes reflexed, glabrous. Fruit elliptic, glabrous, semiwoody.

Flowers white; December to February. In water. *Devenish 333* (flowers), *Leendertz 7985* (fruit).

W S C N E

stellifera Schltr.

Perennial herb, 120–290 mm tall. Leaves 9–10 times as long as broad, linear, scaberulous. Umbels numerous, 4-flowered. Corolla lobes reflexed, pubescent outside, canescent inside. Corolla and corona lobes 5–6 mm long. *Flowers yellow-red, mauve to pink or dirty pink; July to January.* Grassland. *Scheepers PRE 51621.*

W S C N E

ulophylla Schltr.

Herb, ± 200 mm tall. Leaves lanceolate-oblong, acuminate. Umbels 8–15-flowered. Corolla lobed nearly to base. Corona lobes slightly longer than stalk of staminal column; with median keel down inner face of their cavity or upper part. Stony hillside. No specimens in PRE.

W S C N E

velutina (Schltr.) Schltr.

Perennial herb, 75–114 mm tall, whole plant villous to pubescent. Leaves 9–10 times as long as broad, linear, pubescent to villous. Umbels lateral and terminal, 4-flowered. Corolla lobes reflexed, pubescent outside, canescent inside. Corona lobes 4 mm long. *Flowers light purple, white or pink to dirty pink; June to September.* Mountain grassland. *De Souza 558.*

W S C N E

Aspidoglossum E. Mey. (s. Afr.: 24 spp.) 6778010

Kupicha. 1984. *Kew Bull.* 38: 599, 633–666.

araneiferum (Schltr.) Kupicha

(= *Schizoglossum araneiferum* Schltr.)

Perennial herb, 0.3–0.6 m high. Leaves opposite. Glandular hairs present. Corolla glabrous inside, glabrous outside or sparsely pilose with glandular hairs. Petals reflexed at anthesis; each corona lobe divided at apex into 3 slender tortuous laciniae, the outer 2 curving into centre of flower and middle one curving outwards. *Flowers green, yellow or white; January to March.* Grassland. *Acocks 12305.*

W S C N E

biflorum E. Mey.

(= *Schizoglossum biflorum* (E. Mey.) Schltr. var. *biflorum*, = *S. conrathii* Schltr.)

Perennial herb, 0.2–0.7 m high. Leaves opposite, up to 4 mm broad. Corolla lobes pilose inside and outside; 3.5–5.0 mm long, united for a quarter of their length. Corpusculum linear, not flanged. Pedicels 0–3 mm long. *Flowers green or purplish; corona white, yellowish or purplish; September to February.* Grassland or open woodland. *Verdoorn 119.*

W S C N E

dissimile (N.E. Br.) *Kupicha*

(= *Schizoglossum dissimile* N.E. Br. var. *dissimile*,
= *S. dissimile* N.E. Br. var. *pubiflorum* N.E. Br.)

Perennial herb, 60–200 mm tall. Leaves whorled, at least in inflorescence. Corona with basal lobe cristate along its upper edge and ventral appendage curved outwards. *Flowering December*. Mountain grassland, among rocks. *Devenish 1569*.

W	S	C	N	E
---	---	---	---	---

glabrescens (Schltr.) *Kupicha*

(= *Schizoglossum glabrescens* Schltr.,
= *S. loreum* S. Moore)

Perennial herb, 0,35–0,60 m high. Leaves opposite. Glandular hairs usually present. Corolla lobes inside pilose to pubescent; if glabrous then pollinia long and slender. Corona of 5 segments. Corpusculum inconspicuous, smaller than pollinia. *Flowers dull yellow to brownish; corona white or dull yellow; October to March*. Rocky grassland. *Acocks 12303*.

W	S	C	N	E
---	---	---	---	---

glanduliferum (Schltr.) *Kupicha*

(= *Schizoglossum glanduliferum* Schltr.)

Perennial herb, 260–500 mm tall. Leaves opposite. Glandular hairs present. Pedicels 5–8 mm long. Corolla lobes spreading and slightly cucullate, inside of corolla lobes glabrous; outside pilose. Corona of 5 segments, corona lobes always with ventral appendage. Corpusculum inconspicuous. *Flowers pale green, striped maroon; corona lime-green; November*. Grassland in xeric or mesic habitats. *Pott 4900*.

W	S	C	N	E
---	---	---	---	---

interruptum (E. Mey.) *Bullock*

(= *Schizoglossum interruptum* (E. Mey.) Schltr.,
= *S. altissimum* Schltr.)

Perennial herb, 0,5–1,4 m high. Leaves opposite, upper leaf surface appressed-pubescent or glabrous. Corolla lobes 2–3 mm long, pubescent inside and long-pilose round periphery and especially at tip. *Flowers dull purplish red outside, creamy or yellowish inside; corona whitish with purple streaks; October to February*. Grassland and open woodland. *Goossens 1774*.

W	S	C	N	E
---	---	---	---	---

lamellatum (Schltr.) *Kupicha*

(= *Schizoglossum lamellatum* Schltr.,
= *S. bilamellatum* Schltr.)

Perennial herb, 0,15–0,55 m high. Leaves opposite. Glandular hairs present. Pedicels 2–4 mm long. Corolla glabrous inside, erect and sometimes slightly replicate. Corona of 5 segments, corona lobes simple, flat scales. Corpusculum inconspicuous. *Flowers buff-coloured outside, greenish marked with purple inside; corona white; September to January*. Open grassland. *Acocks 13883*.

W	S	C	N	E
---	---	---	---	---

ovalifolium (Schltr.) *Kupicha*

(= *Schizoglossum ovalifolium* Schltr.,
= *S. pumilum* Schltr.)

Perennial herb, 70–330 mm tall, unbranched, erect. Leaves whorled, at least in inflorescence. Flowers relatively large: corolla lobes 4–7 mm long, corona 3–7 mm high. *Flowers green, striped with brown or with purple, corona white marked with pink; September to February*. Grassland, sometimes near water. *Acocks 21016*.

W	S	C	N	E
---	---	---	---	---

restioides (Schltr.) *Kupicha*

(= *Schizoglossum restioides* Schltr.,
= *S. randii* S. Moore)

Perennial herb, 0,5–0,7 m high. Leaves opposite. Glandular hairs present. Corona of 5 segments. Corpusculum conspicuous, larger than pollinia. *Flowers brown with creamy centre; September to December and in March*. Grassland on rock outcrops. *Bradfield 332c*.

W	S	C	N	E
---	---	---	---	---

validum *Kupicha*

(= *Caralluma tsunabensis* Oberm.)

Perennial herb, 0,2–1,0 m high. Leaves whorled, at least in inflorescence. Corolla densely patent-pilose on inside, glabrous or appressed pilose outside; 8–9 mm long. *Flowers dark brown or dark purple; corona white; October and January to March*. Grassland. *Holt 217*.

W	S	C	N	E
---	---	---	---	---

Aspidonepsis *Nicholas & Goyder*

(s. Afr.: 5 spp.)

6778030

Nicholas & Goyder. 1992. *Bothalia* 22: 23–35.

shebae *Nicholas & Goyder*

Perennial herb, 190–340 mm tall. Corolla reflexed when mature, corona lobe cavity without an appendage; distal corona lobe appendage absent. *Flowers: inside—base pale yellow with lilac apex, or base lilac with dark purple apex; outside—base green-yellow with purple or dark purple apex; margins pale yellow to white; corona yellow; December to January*. Montane grassland. *Forrester & Gooyer 216*.

W	S	C	N	E
---	---	---	---	---

Brachystelma *R. Br.* (s. Afr.: 70 spp.) 6870000

Turrill. 1922. *Kew Bull.* 1922: 29–30.

Dyer. 1980. *F.S.A.* 27,4: 7–41.

Forster. 1986. *Bothalia* 16: 227.

Balkwill & Balkwill. 1988. *S. Afr. J. Bot.* 54,1: 60–62.

Key to groups after Dyer in *F.S.A.* 27,4: 2.

- 1a Rootstock producing cluster of cylindrical or fusiform roots
... Group C (*B. gerrardii*, *B. longifolium*, *B. macropetalum*,
B. ramosissimum)
- 1b Rootstock producing tuber 2

- 2a Tips of corolla lobes free Group A (*B. arnotii*, *B. brevipedicellatum*, *B. bruceae* subsp. *bruceae*, *B. bruceae* subsp. *hirsutum*, *B. chlorozonum*, *B. coddii*, *B. cupulatum*, *B. discoideum*, *B. foetidum*, *B. incanum*, *B. minor*, *B. nanum*, *B. oianthum*, *B. parvulum*, *B. pulchellum*, *B. pygmaeum* subsp. *flavidum*, *B. remotum*, *B. stellatum*, *B. swazicum*)
- 2b Tips of corolla lobes united, at least when flower first opens (sometimes free or severing in *B. pachypodium* and *B. pygmaeum*) Group B (*B. barberae*, *B. circinatum*, *B. dimorphum* subsp. *dimorphum*, *B. dyeri*, *B. gemmeum*, *B. gracile*, *B. gracillimum*, *B. pachypodium*, *B. pilosum*, *B. pygmaeum* subsp. *pygmaeum*, *B. stenophyllum*, *B. villosum*)

arnotii Baker

(= *B. grossartii* Dinter)

Perennial herb, 70–200 mm tall. Corolla lobes rotate, spreading horizontally, becoming reflexed. Corona exposed on corolla, corona lobes spreading, bifid or bilobed, inner lobes cushion-like swellings. *Flowers purple-brown with green tip; corona greenish*. Sandveld. No material in PRE.

W S C N E

barberae Harv. ex Hook. f.

(= *Dichaelia barberae* (Harv. ex Hook. f.) Bullock)

Perennial herb, up to 100 mm tall. Flowers in compact terminal or subterminal, many-flowered heads on short peduncles. Corolla lobes 25–40 mm long. *Flowers: tube yellow with crimson-brown bands, mouth purple-pubescent; lobes greenish on back, maroon to crimson-brown inside; September to January*. Grassland in sand. Venter 1046.

W S C N E

brevipedicellatum Turill

Perennial herb, 50–400 mm tall, coarsely hairy. Corolla rugose above, triangular. Corona cylindrical, tube with slits opposite pockets. *Flowers dark maroon or spotted; corona maroon; November to February*. Sandveld. Hardy 2205.

W S C N E

bruceae R.A. Dyer subsp. *bruceae*

Prostrate perennial herb. Corolla with flat base; lobes rotate, spreading horizontally from base; 15–18(–25) mm in diameter; surface glabrous. *Flowers purple-maroon; October to March*. Mountains, grassland on whitish sandy soil. Van der Merwe PRE 55681.

W S C N E

bruceae R.A. Dyer subsp. *hirsutum* R.A. Dyer

Prostrate perennial herb. Corolla as in subsp. *bruceae* but surface of corolla with long soft hairs. *Flowers purple-maroon; October to November and in March*. Rocky ridges. Van der Merwe PRE 55680.

W S C N E

chlorozonum E.A. Bruce

Perennial herb, up to 100 mm tall. Corolla ± 15 mm in diameter, divided ± halfway down, tube broadly campanulate, surface hairy. Corona producing campanulate tube. *Flowers yellowish green outside, greenish to*

almost black ring-markings within, minutely green-spotted around corona; corona reddish brown; October (flowered in cultivation). Mountainsides. Hardy 4170.

W S C N E

circinatum E. Mey.

(= *B. galpinii* (Schltr.) N.E. Br.,
= *B. pallidum* (Schltr.) N.E. Br.)

Perennial herb, 70–300 mm tall, shortly pubescent. Corolla with cylindrical beak in bud; tube shorter than 3 mm, lobes glabrous inside, pubescent outside, cage-like open part becoming broader than base. *Flowers white to maroon; July to June*. Grassland on rocky outcrops/slopes. Codd 2246.

W S C N E

coddii R.A. Dyer

Prostrate perennial herb. Corolla 17–20 mm in diameter, shallowly to broadly basin-shaped or campanulate, glabrous, bud with pyramidal or tapering beak. *Flowers: tube parchment-coloured with flesh-coloured markings; lobes velvety maroon or scarlet to yellowish red becoming greenish yellow on tip; corona dark brown; September to April*. Sandy outcrops in mistbelt. Codd 9431.

W S C N E

cupulatum R.A. Dyer

Perennial herb, up to 150 mm tall. Corolla lobes oblong-lanceolate, smooth on inner face. Corona cupular, overtopping staminal column, inner corona lobes subobsolete, cushion-like at base of anthers. *Flowers green, purple-tinged; December to January*. Sandveld. Keith 42.

W S C N E

dimorphum R.A. Dyer subsp. *dimorphum*

Perennial herb, 100 mm tall, mostly pubescent. Corolla with cylindrical beak in bud; tube shorter than 3 mm or absent; cage-like open part becoming broader than base; inner face of lobes puberulous in lower half, outer mainly glabrous. Outer corona lobes almost obsolete or outer margin very shortly bidentate. *Flowers dirty cream with purplish touches or pale green; October to January*. Alluvial soil in expansive shallow pans. Hutchinson s.n. PRE 56742.

W S C N E

discoideum R.A. Dyer

Perennial herb, up to 100 mm tall. Leaves usually ± as broad as long, up to ± 15 mm long. Corolla lobes glabrous. Corona disciform, fleshy. *Flowers light yellow; November*. Savanna in gravelly, sandy soil. Hardy 2440.

W S C N E

dyeri K. & M. Balkwill

Erect to prostrate perennial herb. Leaves broadly ovate becoming narrowly ovate. Corolla up to 7 mm long, with slender cylindrical beak in bud. Corona develop-

ing from or slightly above base of staminal column. Flowers cream outside, flushed with pale brownish pink towards tips of lobes, inside whitish cream becoming yellowy green at tips of lobes; corona white, tinged faint yellow-green; October. Rocky outcrops on serpentine. Balkwill & Cadman 2578.

W S C N E

foetidum Schltr.

(= *B. rehmannii* Schltr.)

Perennial herb, 70–150 mm tall. Stems and leaves coarsely hairy. Inner surface of corolla glabrous, tube campanulate, divided to $\pm$ two-thirds of its length. Flowers: tube white to yellowish within, with purple-brown warty spots becoming dark purple-brown to nearly black on lobes; October to January. Grassland. Codd 6169.

W S C N E

gemmeum R.A. Dyer

Perennial herb, 50–70 mm tall. Corolla with few, long, cylindric-clavate, vibratile hairs within tube near base of lobes. Outer corona of 5 deeply divided bilobed lobes. Flowers purple; December. Percy-Lancaster 199.

W S C N E

gerrardii Harv.

(= *B. nigrum* R.A. Dyer,
= *Dichaelia gerrardii* Harv.)

Perennial herb, up to 350 mm tall. Stems terete, pubescent. Leaves broadly ovate. Corolla 10–20 mm long, glabrous outside, minutely puberulous inside, with little or no tube, lobes free at tips. Flowers dark green to metallic blue-green or black, greenish grey or yellowish within base, margins with reddish purple hairs; corona blackish; January. Grassland. Smuts & Gillett 3333.

W S C N E

gracile E.A. Bruce

Perennial herb, up to 0.7 m high. Leaves linear. Corolla 17 mm long, with slender cylindrical beak in bud, divided nearly to base. Inner corona lobes elongated above staminal column. Flowers: corolla with long soft white hairs; outer corona lobes reddish at base, green above, dorsally white-pubescent; inner lobes blackish red; October to January. Grassland. Leach 13427.

W S C N E

gracillimum R.A. Dyer

Perennial herb, up to 450 mm tall. Leaves ovate, 10–15 mm long. Corolla 45 mm long, with slender cylindrical beak in bud, divided nearly to base. Inner corona lobes elongated above staminal column. Flowering December. Groot-Marico district. Louw 811.

W S C N E

incanum R.A. Dyer

Spreading to decumbent perennial herb. Leaves hairy, sometimes appearing silvery. Corolla with short broad tube, rotate, with ring of long hairs round corona. Corona producing campanulate tube. Flowers: corolla

tube with light violet hairs, lobes dark violet-black and with greenish yellow tips; December to February. Grassland. Van Wyk 2668.

W S C N E

longifolium (Schltr.) N.E. Br.

Perennial herb, 100–300 mm tall. Stems angular or ribbed, glabrous or bifariously puberulous. Leaves linear, up to $\pm$ 70 mm long. Corolla with no tube, lobes free at tips, 10 mm long. Flowers greenish, tinted brown, lobes with purple hairs to halfway. Stony places on mountains. Schlechter 3873.

W S C N E

macropetalum (Schltr.) N.E. Br.

Perennial herb, up to 0.6 m high. Stems terete, pubescent. Leaves ovate to subcordate. Corolla with very short tube, flattish, lobes 20 mm long, free at tips, hairy on both surfaces, pubescence coarse, brownish. Flowers yellow to greenish, marked with reddish or brownish dots; corona dark violet-brown to black; November to February. Damp situations at high altitude, eastern escarpment. Onderstall 1087.

W S C N E

minor E.A. Bruce

Erect or spreading perennial herb, up to 30 mm tall. Pedicels shorter than petioles, flowers hidden by spatulate leaves. Corolla lobes slightly spreading, densely ciliate. Outer corona lobes thickened, deeply bilobed. Flowers: corolla tube greenish cream outside, with red venation, maroon or purple within with greenish cream streaks and long white hairs; corona purplish maroon; October to January. In shallow pockets of dolomite. Hardy 2333.

W S C N E

nanum (Schltr.) N.E. Br.

Perennial herb, 50–80 mm tall. Flowers 1–3 at nodes. Pedicels $\pm$ as long as petioles. Corolla up to 4.5 mm long, lobes longer than tube; tube cup-like. Flowers pinkish with dark green tips; corona red-tipped; November to March. Mixed grassland. Jacobsen 1159.

W S C N E

oianthum Schltr.

Perennial herb, 60–80 mm tall. Corolla with short lobes, tube ovoid-campanulate, 10–15 mm long, contracted slightly to mouth, long white hairs within. Flowers: tube yellow outside with purple-brown mottling or entirely purple-brown, lobes with pale purple or rose-coloured hairs; corona purple-brown; October to November. Rocky outcrops of mountains. Vahmeijer 2475.

W S C N E

pachypodium R.A. Dyer

Suberect or spreading perennial herb. Leaves broadly ovate to broadly elliptic-ovate. Corolla with stout beak in bud, lobes united at tips but becoming free, pinched in at base; with short, campanulate tube. Flowers bright

greenish yellow; September to October and in January. Shady kloofs of mountains. Renny 151.

W S C N E

parvulum R.A. Dyer

Perennial herb, up to 50 mm tall. Corolla 5 mm long, spreading, 6–9 mm in diameter. Corona producing outer lobes spreading to corolla tube, deeply bilobed. Flowers: corolla tube whitish within, lobes dark maroon; corona lobes maroon; October to February, (November to January in cultivation). Mountains. Hardy 4090.

W S C N E

pilosum R.A. Dyer

Perennial herb, 250 mm tall. Plant pilose with hairs adpressed. Pedicels rarely longer than 5 mm; sepals shorter than 3 mm. Corolla with cylindrical beak in bud; cage-like open part becoming broader than base, tube 1.0–1.5 mm long or absent. Flowering July. Wooded grassland. Galpin 11573.

W S C N E

pulchellum (Harv.) Schltr.

Perennial prostrate herb. Leaves diminishing in size towards tips of branches. Corolla 7–12 mm in diameter, with flat base, shallowly saucer-shaped, lobes rotate, 2.5–4.0 mm long. Flowers maroon with transverse dull yellow banding around corona, lobes becoming darker purple-brown to tips; corona dark purple-brown; November and February. Grassland on TMS outcrops. Van der Schijff 6322.

W S C N E

pygmaeum (Schltr.) N.E. Br. subsp. pygmaeum

(= *B. pygmaeum* (Schltr.) N.E. Br.,
= *B. pygmaeum* (Schltr.) N.E. Br. var. *breviflorum* (Schltr.) N.E. Br.)

Perennial herb, 40–80 mm tall. Corolla ± 10 mm in diameter with few medifixed hairs around base within; lobes united at tips, rarely some breaking free on same plant. Corona fused to staminal column, expanding from near top, slightly spreading. Flowers greenish or chrome-yellow to purple-brown; July to November. In grassland among rocks. Venter 4504.

W S C N E

pygmaeum (Schltr.) N.E. Br. subsp. flavidum (Schltr.) R.A. Dyer

(= *B. flavidum* Schltr.)

Perennial herb, 40–80 mm tall. Corolla ± 10 mm in diameter with few medifixed hairs around base within. Corona fused to staminal column, expanding from near top, slightly spreading. Flowers greenish or chrome-yellow to purple-maroon. On rocky ridges in grassland. Van der Merwe 1086.

W S C N E

ramosissimum (Schltr.) N.E. Br.

Perennial herb, 150 mm tall. Stems angular or ribbed, glabrous or sometimes sparsely hairy. Corolla with no

tube, lobes 3–4 mm long, free at tips. Flowers white to pale yellow or greenish; October to December. Grassland. Botha 3352.

W S C N E

remotum R.A. Dyer

Perennial spreading herb. Leaves broadly ovate to lanceolate. Corolla up to 18 mm in diameter, tube campanulate, lobes 4–7 mm long; bud with pyramidal or tapering beak. Flowers mauve or with mauve blotches and long white hairs inside; October to January. On shale outcrops in mountain grassland. Drews 200.

W S C N E

stellatum E.A. Bruce & R.A. Dyer

Perennial suberect or spreading herb, bearing masses of small star-like flowers. Pedicels slender, up to 20 mm long. Corolla ± 10 mm in diameter, campanulate, divided to ± half or two-thirds of its length. Flowers: tube cream, tinged with purple and with purplish hairs, lobes with long white hairs which become whitish to yellowish green on tips; September to November and in February. On mountains. Codd 8050.

W S C N E

stenophyllum (Schltr.) R.A. Dyer

Perennial herb, up to 150 mm tall. Corolla tube cylindrical, 5–7 mm long, lobes 9–14 mm long. Outer corona cylindric-cupular, overtopping staminal column. Flowers maroon, corona yellow; December to February. Grassland in sand. Hardy 2206.

W S C N E

swazicum R.A. Dyer

Perennial prostrate herb. Corolla lobes slightly opening to half spreading. Outer corona lobes deeply lobuled with branches curved behind inner corona lobes. Flowers dark purple; corona yellow; November to March. Mountains. Stirton 6856.

W S C N E

villosum (Schltr.) N.E. Br.

Perennial herb, 100–300 mm tall, villous with spreading hairs. Corolla with cylindrical beak in bud; tube ± 4 mm long, cage-like open part becoming broader than base. Flowering October to November. In grassland. Thompson PRE 56711.

W S C N E

Ceropegia L. (s. Afr.: 52 spp.)6874000

Dyer. 1980. F.S.A. 27,4: 49–82.

Key to groups after Dyer in F.S.A. 27,4: 43.

- 1a Rootstock producing cluster of fusiform, fleshy or fibrous roots.....2
- 1b Rootstock producing solid tuber, sometimes climbers with adventitious tubers along stem.....3

- 2a Corolla lobes free at apex Group A (*C. cimiciodora*, *C. scabriflora*, *C. stapeliiformis* subsp. *serpentina*)
- 2b Corolla lobes fused at apex Group B (*C. ampliata*, *C. carnosa*, *C. crassifolia*, *C. distincta* subsp. *haygarthii*, *C. distincta* subsp. *verruculosa*, *C. nilotica*, *C. racemosa* subsp. *setifera*, *C. sandersonii*)
- 3a Corolla lobes free at apex Group C (*C. mafekingensis*, *C. multiflora* subsp. *tentaculata*, *C. pygmaea*)
- 3b Corolla lobes fused at apex Group D (*C. africana*, *C. conrathii*, *C. decidua* subsp. *decidua*, *C. decidua* subsp. *pretoriensis*, *C. insignis*, *C. meyeri*, *C. multiflora* subsp. *multiflora*, *C. pachystelma*, *C. rendalii*, *C. stentiae*, *C. turricula*, *C. woodii*)

africana R. Br.

Twining perennial herb. Corolla lobes forming an open cage-like structure, a third to half the length of corolla, forming slender beak; tube somewhat trumpet-shaped at mouth. *Flowers greenish striate with violet-brown, lobes violet-brown on back, keel with few dark purple hairs; August and January to March.* In thorn scrub. *Codd 8189.*

W S C N E

ampliata E. Mey.

Succulent twining perennial herb. Leaves rudimentary or absent. Corolla lobes narrowed evenly to united apex; tube ample, remaining more than 10 mm in diameter above basal inflation. *Flowers pale green with narrow purple band around mouth of inflation, lobes bright green; November to March.* Climber in bushes. *Hardy 5519.*

W S C N E

carnosa E. Mey.

Twining perennial herb. Leaves slightly fleshy, ovate to lanceolate, 30 × 20 mm. Corolla up to 20 mm long; lobes ± a quarter the length of corolla, cage short and broadly rounded. *Flowers whitish and dark maroon; February.* Dense riverine bush. *Buitendag 1295.*

W S C N E

cimiciodora Oberm.

Succulent twining and climbing perennial herb. Leaves rudimentary. Corolla up to 50 mm long, ± a quarter divided, lobes opening star-like over tube. *Flowers mottled grey and speckled with purple at apex; November to April.* Very hot conditions, growing in shelter of scrub bush. *Hardy 5387.*

W S C N E

conrathii Schltr.

Perennial herb, 60–120 mm tall. Leaves oblong-lanceolate to ovate-oblong, fleshy. Corolla 35 mm long; lobes linear, forming rounded cage. *Flowers vinaceous-crimson on tube and darker on lobes; August to September and in December.* Open grassland. *Kitching sub PRE 51792.*

W S C N E

crassifolia Schltr.

(= *C. crispata* N.E. Br.,
= *C. thorncroftii* N.E. Br.)

Succulent climbing or twining perennial herb. Leaves decreasing in size. Flowers in dense cymes. Corolla 25–50 mm long, ± a third divided, with basal inflation globose. *Flowers pale green with purplish markings and purplish blotched and striped inside; inner surface of lobes closely reticulate with purple-brown, with long purple hairs in base of keel; August and January to April.* Climber in bushes. *Codd 8149.*

W S C N E

decidua E.A. Bruce subsp. *decidua*

Twining perennial herb. Leaves deciduous with age, often shed before flowering. Corolla lobes broadly spatulate with united tips forming small canopy; tube cylindrical, glabrous outside. *Flowers greenish purple; August and December.* Under shrubs. *Percy-Lancaster 511.*

W S C N E

decidua E.A. Bruce subsp. *pretoriensis* R.A. Dyer

Twining perennial herb. Leaves persistent. Corolla lobes narrowly spatulate, united tips not forming canopy; tube cylindrical, glabrous outside. *Flowers greenish purple; December to April.* Hills. *Codd 9565.*

W S C N E

distincta N.E. Br. subsp. *haygarthii* (Schltr.) H.E. Huber

(= *C. haygarthii* Schltr.,
= *C. tristis* Hutch.)

Subsucculent twining perennial herb. Stems smooth. Corolla lobes extending into slender column expanding again into 5-winged knob 3–5 mm in diameter. *Flowers pinkish white or greenish tinted, spotted with violet, 'knob' dull purple or purple-brown; July to June.* Subtropical parts. *Codd 9817.*

W S C N E

distincta N.E. Br. subsp. *verruculosa* R.A. Dyer

Subsucculent twining perennial herb. Stems verruculose. Corolla lobes extending into slender column, becoming free and separating into narrow cage. *Flowers whitish spotted with violet; September to December and in March.* Scrub bush. *Van Wyk 5242.*

W S C N E

insignis R.A. Dyer

Perennial herb, 200–450 mm tall. Leaves linear. Flowers few, solitary at nodes. Corolla 100–200 mm long, with lobes twisted together in upper half. *Flowers reddish brown with purple hairs in throat and white hairs on base of lobes; December.* In grassland on stony mountainside. *Louw 812.*

W S C N E

mafekingensis (N.E. Br.) R.A. Dyer

(= *C. patriciae* Rauh & Buchloh,
= *Brachystelma mafekingense* N.E. Br.)

Perennial herb, 15–50 mm tall. Few- to many-flowered fascicles of flowers opening together. Corolla 10–12

mm long, glabrous, divided to slightly more than half-way; lobes obovate-oblong, replicate, inflexed, acute at apex. *Flowers dark purple outside, yellow and purple inside, lobes blackish inside; December.* Grassland or open bushveld. *Zambatis 1536.*

W S C N E

meyeri Decne.

Twining perennial herb. Plants pubescent. Leaves ovate-cordate to lanceolate, often coarsely toothed. Corolla 40–60 mm long, glabrous outside or with few hairs, cage $\pm$ rounded, tube bottle-shaped. *Flowers white or greenish white on lower half, longitudinally purple-brown or violet-dotted or -striped in upper half, lobes velvety black with longitudinal green stripes and long crinkled cilia; January to March.* Edge of bushes. *Onderstall 29NS10.*

W S C N E

multiflora Baker subsp. **multiflora**

Twining perennial herb. Corolla lobes 5–7 mm long, basal portion spreading horizontally and upper half thread-like and meeting above corolla throat. *Flowers greenish, longitudinally purple-papillate within basal inflation; December to February.* Climber in bushes or grassland. *Codd 6801.*

W S C N E

multiflora Baker subsp. **tentaculata** (N.E. Br.) H.E.

Huber
(= *C. tentaculata* N.E. Br.)

Twining perennial herb. Corolla lobes 7–12 mm long, filiform in upper half, usually spreading. *Flowers greenish, longitudinally purple-papillate within basal inflation; January and April.* Bayliss 1308.

W S C N E

nilotica Kotschy

(= *C. plicata* E.A. Bruce,
= *C. grandis* E.A. Bruce)

Subsucculent twining perennial herb. Leaves broadly ovate to lanceolate, margin irregularly toothed. Corolla up to 50 mm long, lobes rarely longer than 15 mm, without long clavate hairs. *Flowers whitish with mauve marking; lobes blackish purple and hairy within, marked with yellow spots near base; October to March.* Bushveld. *Nell 168.*

W S C N E

pachystelma Schltr.

(= *C. undulata* N.E. Br.)

Twining perennial herb. Corolla puberulous outside, lobes often with slightly pinched-in margins towards base, spatulate above; tube slightly expanded to mouth. *Flowers whitish or light green spotted purple or maroon; October to April.* Twining in bush groups. *Codd 4819.*

W S C N E

pygmaea Schinz

(= *C. gymnopoda* Schltr.,
= *C. pumila* N.E. Br.)

Perennial herb, 100–120 mm tall. Corolla variably curved, drooping, puberulous, with triangular lobes

much shorter than tube. *Flowers dark purple; January to April.* Kalahari sandveld. *Hardy 2209.*

W S C N E

racemosa N.E. Br. subsp. **setifera** (Schltr.) H.E. Huber
(= *C. setifera* Schltr.)

Twining perennial herb. Corolla 20–25 mm long, upper third forming a rounded cage, basal inflation almost obsolete. *Flowers greenish to yellow, variably purplish marked, darker on margin of lobes; October to May.* Bush clumps on rocky outcrops, rocky hillsides, riverine bush. *Codd 5910.*

W S C N E

rendalii N.E. Br.

(= *C. galpinii* Schltr.)

Twining or sometimes dwarf erect perennial herb. Corolla lobes forming an umbrella-like canopy $\pm$ 10 mm in diameter, supported by slender struts. *Flowers greenish; December to April.* On rocky dolerite outcrops. *Codd 8116.*

W S C N E

sandersonii Decne. ex Hook. f.

(= *C. monteiroae* Hook. f.)

Twining perennial herb. Corolla lobes fused at apex into an umbrella-like canopy either centrally depressed or somewhat conical, often with fringe of hairs from margin. *Flowers light green on inflation, striped with green and white above; July to August and December to March.* Climbing in scrub. *Thorncroft sub PRE 50127.*

W S C N E

scabriflora N.E. Br.

Perennial herb, up to 400 mm tall. Leaves linear. Corolla papillate-scabrous on outside of inflated base, lobes spreading gradually from tube, evenly linear. *Flowers yellowish green, purplish veined at mouth, lobes pubescent with fine purple hairs inside and tuft of dark purple hairs slightly above base; October.* Quarzite outcrops in grassland. *Acocis 13158.*

W S C N E

stapeliiformis Haw. subsp. **serpentina** (E.A. Bruce)

R.A. Dyer
(= *C. serpentina* E.A. Bruce,
= *C. stapeliiformis* Haw. var. *serpentina* (E.A. Bruce) H.E. Huber)

Succulent twining perennial herb. Leaves rudimentary, with 2 golden-yellow glands at base and 2 on stem near leaf base. Corolla up to 70 mm long, nearly half divided, lobes not greatly spreading, sometimes cohering and twisted towards apex. *Flowers pale greenish white, spotted with violet, lobes white, with margins and apical part violet-purple, greenish yellow or purple-brown; August and November to May.* Climber in shrubs and bush groups. *Codd 43.*

W S C N E

stentiae E.A. Bruce

Perennial herb, 80–120 mm tall. Leaves narrowly linear. Corolla 45–70 mm long, lobes very slender, much longer than tube, tube bent at right angles. *Flowers*

brownish purple with greenish stripes from sinuses to base; December to February. In basaltic loam. Galpin 215.

W S C N E

turricula E.A. Bruce

Perennial herb, up to 300 mm tall. Leaves linear. Corolla up to 65 mm long, lobes shorter than tube, flat-topped, with long clavate-vibratile hairs. *Flowers pale green with purplish brown mottling; lobes inside pale green near base, transversely white-banded, followed by dark purple and green in upper half; December to February.* Percy-Lancaster 223.

W S C N E

woodii Schltr.

(= *C. euryacme* Schltr.,
= *C. barbertonensis* N.E. Br.)

Trailing or climbing perennial herb. Corolla lobes spatulate, densely or thinly bearded, shorter than tube; tube glabrous outside. *Flowers pinkish on tube with dark striations to base and lobes with blackish margins; August and December to March.* Rock ledges. Codd & Dyer 9180.

W S C N E

Cordylogyne E. Mey. (s. Afr.: 1 sp.) 6783000

Brown. 1909. F.C. 4,1: 586.

globosa E. Mey.

Perennial herb, 0,15–0,75 m high. Leaves linear, erect or ascending with revolute margins. Umbels globose, terminal, long-peduncled, solitary or 2 (rarely 3 or 4) to a stem. *Flowers green and white, brownish, white and pink; November to April.* Marshy grassland. Devenish 1498.

W S C N E

Cynanchum L. (s. Afr.: 15 spp.) 6834000

Brown. 1904. F.T.A. 4,1: 391–402.

Brown. 1909. F.C. 4,1: 744–754.

Dyer. 1937. Mem. bot. Surv. S. Afr. 17: 138.

Bullock. 1956. Kew Bull. 1955: 624.

Liede. 1991. Taxon 40: 113–117.

ellipticum (Harv.) R.A. Dyer

(= *C. capense* Thunb.)

Perennial twining herb. Leaves 12–50 mm long, oblong to broadly elliptic-oblong, acute to very broadly rounded or emarginate and apiculate; rounded or slightly subcordate at base. Corolla lobes 2–3 mm long, glabrous on inner face. Corona truncate or slightly 5-crenate at top. Staminal column not stipitate. *Flowers white; November to January.* Margins of evergreen mountain forest. Devenish 1791.

W S C N E

gerrardii (Harv.) Liede

(= *C. tetrapterum* (Turcz.) R.A. Dyer,

= *C. sarcostemmatoides* K. Schum.)

Perennial twining herb. Leafless or with minute, sessile, ovate, acute, rudimentary leaves. Stem succulent. *Flowers green; corona white; September and March to June.* Mountainsides in thickets. Codd & Dyer 7708.

W S C N E

mossambicense K. Schum.

Twining perennial herb. Leaves 25–50 mm long, cordate base, apex acute or obtuse with mucro. Corolla lobes 4–6 mm long. Corona with 5 slightly hooded lobes within tube, folded in bases of longer teeth. Staminal column not stipitate. *Flowers white; July and January.* In thickets near rivers or dams. Van der Schijff 638.

W S C N E

validum N.E. Br.

Erect perennial herb. Leaves 40–75 mm long, cordate or subcordate at base, apex acute. Corolla lobes 4 mm long. Corona tubular, 10-toothed, with alternate teeth entire or bifid. Staminal column stipitate. *Flowers yellow with purple base; January to February.* Mountainsides. Acocks 16697.

W S C N E

virens D. Dietr.

Twining perennial herb. Leaf blade 25–80 mm long, base cordate, apex acute. Corolla lobes 4–6 mm long, twisted, puberulous inside. Corona lobes 2–4 mm long. Staminal column not stipitate. *Flowers white; November to February.* Thickets near rivers, forest margins. Bredenkamp 457.

W S C N E

Dregea E. Mey. (s. Afr.: 2 spp.) 6914000

Brown. 1903. F.T.A. 4,1: 420.

Brown. 1909. F.C. 4,1: 774–775.

Bullock. 1957. Kew Bull. 1956: 514–516.

floribunda E. Mey.

(= *Marsdenia floribunda* (E. Mey.) N.E. Br.,

= *M. dregea* (Harv.) Schltr.)

Perennial climber. Follicles markedly longitudinally winged, glabrous. Calyx lobes small, obtuse, not foliaceous. Corolla 5–6 mm in diameter, lobes velvety papillate on inner surface. *Flowers white; November to December.* Bushveld. Van der Schijff 6390.

W S C N E

macrantha Klotzsch

(= *Marsdenia zambesiaca* Schltr.,

= *M. macrantha* (Klotzsch) Schltr.)

Perennial climber. Follicles not winged, shining, often mottled green and brown. Calyx lobes lanceolate, acute, somewhat foliaceous. Corolla ± 20 mm in diameter, lobes densely villous all over inner surface. *Flowers creamy white; September to January.*

Bushveld. *Codd 4828* (flowers), *Van der Schijff & Marais 3712* (fruit).

W S C N E

Duvalia Haw. (s. Afr.: 16 spp.) 6883000

White & Sloane. 1937. *Stapelieae* 2: 744–781.

polita N.E. Br.

Dwarf succulent decumbent perennial herb. Corolla glabrous or minutely puberulous or papillate on annulus, lobes not replicate, ciliate or glabrous. *Flowers dull green outside, rich purplish chocolate inside; corona chocolate-red, inner coronal lobes dull orange-red; September to June.* Woodland, scrub, stony hillsides, sandy soil. *Codd 5512.*

W S C N E

Fockea Endl. (s. Afr.: 9 spp.) 6924000

Brown. 1909. *F.C.* 4, 1: 777–781.

angustifolia K. Schum.

(= *F. lugardii* N.E. Br.,
= *F. sessiliflora* Schltr.)

Erect or sometimes twining perennial herb. Stems 150–450 mm long. Leaves linear, 4–20 times as long as broad, narrowed or rounded at base. Corolla lobes 12–16 mm long. Corona $\pm$ 4 times as long as corolla tube. *Flowers greenish; corona white; October to June.* Rocky koppies or sandy flats. *Jacobsen 2809.*

W S C N E

Gymnema R. Br. (s. Afr.: 1 sp.) 6891000

Schultes. 1820. *Syst. Veg.* 6: 57.
Huber. 1967. *F.S.W.A.* 114: 33.

sylvestre (Retz.) Schult.

Semiclimbing shrub. Leaves subrotund-ovate. Inflorescence umbellate. Peduncle as long as to twice as long as petiole of subtending leaf. *Flowers light yellow, cream or white; November to April.* Kloofs, wooded mountainsides and riverine forest. *Codd 3754.*

W S C N E

Huernia R. Br. (s. Afr.: 41 spp.) 6887000

White & Sloane. 1937. *Stapelieae* 3: 819–959.
Dyer. 1956. *Flower. Pl. Afr.* 31: t. 1218.
Leach. 1969. *Bothalia* 10: 54.
Leach. 1976. *Jl S. Afr. Bot.* 42, 4: 439–487.
Leach. 1988. *Excelsa Tax. Ser.* 4: 1–197.

hystrix (Hook. f.) N.E. Br. var. **hystrix**

(= *Stapelia hystrix* Hook. f.,
= *H. appendiculata* A. Berger)

Decumbent to erect succulent perennial herb. Stems 5-angled, strongly toothed along angles. Inner corona

lobes much exceeding anthers, irregularly enlarged at apex, smooth, sometimes slightly pustulate or rugulose. *Flowers buff-coloured to yellowish, marked with brown-red spots and lines; November to July.* Rocky outcrops in shade. *Leach 14133.*

W S C N E

insigniflora C.A. Maass

(= *H. humilis* sensu Schltr.,
= *H. confusa* E. Phillips)

Succulent perennial herb, 50–100 mm tall. Stems 4-, rarely 5-angled. Corolla unmarked, with prominently raised, contrastingly coloured annulus. Inner corona lobes subequalling or only shortly exceeding anthers, with transverse dorsal gibbosity. *Flowers: annulus light crimson to purple-brown; corolla lobes greenish white, ivory, buff, pale rose, unmarked or often irregularly transversely barred ('blotched') with light red or purple; corona cream to buff-coloured, rarely dark blackish purple and yellow, sometimes with maroon markings; November to June.* Mountain tops or steep mountainsides. *Hardy 4071.*

W S C N E

kirkii N.E. Br.

(= *H. bicanpanulata* I. Verd.)

Tufted and succulent perennial herb. Stems 4 or 5-angled. Corolla bicanpanulate. Inner corona lobes much exceeding anthers, regularly clavate, at least 3 mm long. Tube, papillae and inner corona lobes all dark to blackish maroon. *Flowers pale yellowish outside, maroon-tinged, inside cream, irregularly marked with reddish or maroon spots and blotches, unicoloured blackish maroon in tube, rarely very obscurely, transversely streaked or vaguely spotted; corona blackish maroon; August and December to May.* Sandy or rocky soil in shade. *Codd 6095.*

W S C N E

loeseneriana Schltr.

Tufted and succulent perennial herb, $\pm$ 35 (occasionally up to 80) mm tall. Stems 4-angled. Corolla campanulate, tube short, wider than long, widening at mouth, densely concentrically lined. Inner corona lobes much exceeding anthers, regularly clavate, up to 2 mm long, apex knob-like. *Flowers buff to brownish outside, inside brownish ground colour marked with brown to dark crimson, broken transverse lines and spots; October to May.* Rocky outcrops or rocky mountainsides. *Mauve & Retief sub PNBG 25997.*

W S C N E

longituba N.E. Br. subsp. **longituba**

Tufted and succulent perennial herb. Stems 4- or 5-angled. Corolla tubular-campanulate, concentrically lined (broken lines) on cream-coloured background; papillae spotted and banded. Inner corona lobes much exceeding anthers, regularly clavate, at least 3 mm long. *Flowers cream-coloured, inside marked with brown-red to maroon spots and broken lines; corona blackish maroon;*

March to April. Semidesert areas often in semishade of thorn scrub. Bayliss 2025 in Leach 12138.

W S C N E

nouhuysii I. Verd.

Succulent perennial herb, 80–200 mm tall. Stems 4–5(6)-angled, tuberculate-toothed, teeth mostly tipped with hardened acute point. Corolla campanulate, (20–)25–35 mm in diameter, limb and lobes regularly and boldly, transversely lined, evidently papillate. Inner corona lobes much exceeding anthers, subulate or narrowly triangular-obtuse (attenuate). Flowers greenish with brown-red spots and concentric broken lines; corona light greenish yellow; March. Van Nouhuys sub Tvl.Mus. 30614.

W S C N E

procumbens (R.A. Dyer) L.C. Leach

(= *Duvalia procumbens* R.A. Dyer)

Procumbent succulent perennial herb. Corolla lobes pubescent, attenuate; sepals much exceeding sinuses; with prominent raised annulus. Inner corona lobes shorter than anthers, with greatly enlarged dorsal gibbosity forming a spreading or suberect prominent dorsal lobe, inner portion much reduced, closely incumbent on anthers. Flowers cream or putty-coloured, red-margined; corona and annulus maroon; July and December to February. Sprawl over rocky slopes or hanging down from ledges, in light shade of mixed bush. Codd 5389.

W S C N E

quinta (E. Phillips) A.C. White & B. Sloane var. **quinta**

(= *H. scabra* N.E. Br. var. *quinta* E. Phillips)

Succulent perennial herb, up to 70 mm tall. Stems 4- or 5-angled. Corolla deeply bowl-shaped, pale (whitish), boldly marked with concentric, broken lines and prominent papillae at and around mouth of tube; papillae conical with stiff bristle at apex; without an annulus. Inner corona lobes subequalling to shortly exceeding anthers, with transverse dorsal gibbosity, tapering to small minutely tuberculate subobtuse apex, incumbent on or rising slightly above anthers. Flowers white to whitish cream, sparingly marked with concentric, often pentagonally arranged, broken, red lines; corona cream or pale brown, rarely with maroon markings; October to December. Dolomite slopes with sparse cover of shrubs and small trees. Leach & Louw 14071.

W S C N E

quinta (E. Phillips) A.C. White & B. Sloane var. **blyderiverensis** L.C. Leach

Succulent perennial herb, up to 70 mm tall. Corolla larger, spotted, not transversely striped, limb and lobes spreading, tube markedly constricted at mouth; long bristles absent. Flowers same as var. *quinta* but spotted not striped. Habitat as for var. *quinta*. Percy-Lancaster 967.

W S C N E

stapelioides Schltr.

(= *H. vogtsii* E. Phillips)

Succulent perennial herb, $\pm$ 40 mm tall (occasionally up to 100 mm). Stems 4- or 5-angled, strongly toothed along angles. Corolla lobes narrowly triangular, at least 1.5 times as long as broad. Inner corona lobes much exceeding anthers, irregularly enlarged at apex, tuberculate ('bristly'). Flowers buff to yellowish outside, inside marked with maroon or brown-red spots and lines; December to April. Bushveld. Codd 7727a.

W S C N E

transvaalensis Stent

Succulent perennial herb, 40–60 mm tall. Corolla with an abruptly spreading limb and broad annulus around mouth of tube; with long simple hairs in throat, extending sparsely to annulus; lobes distinctly 'zebra-striped'. Inner corona lobes much exceeding anthers, subulate to a fine point, connivent, not very widely divergent above anthers. Flowers greenish cream, tinged maroon outside, inside of tube and annulus dark maroon, limb and lobes cream to yellowish with irregular zebra-like markings; corona cream with maroon margin; November and February to June. Sandy soil in shade. Codd 154.

W S C N E

whitesloaneana Nel

Tufted and succulent perennial herb, lower than 50 mm. Stems 4- or 5-angled, tuberculate-toothed. Corolla campanulate, $\pm$ 14 mm in diameter and long; tube concentrically lined inside (often broken lines or elongated spots arranged in lines). Inner corona lobes much exceeding anthers, subulate, dorsiventrally compressed towards 1 mm-wide gibbous base, tapering to small obtuse apex. Flowers with outside purplish mottled, inside cream, irregularly spotted and concentrically lined with purplish red; November to May. Upper mountainsides. Codd & Dyer 9111.

W S C N E

zebrina N.E. Br. subsp. **zebrina**

Succulent perennial herb, creeping and matforming, $\pm$ 50 mm tall. Stems mostly 5-angled (rarely 6), strongly toothed. Corolla lobes distinctly transversely ('zebra') striped; with prominently raised annulus. Inner corona lobes shorter than to slightly exceeding anthers, with evident transverse dorsal gibbosity. Flowers (25–) 35–45(–50) mm in diameter. Flowers sulphur-yellow or pale greenish yellow marked with transverse reddish to red-brown or purplish bands or spots; annulus heavily spotted red to dark purple-brown, spots often merging so that annulus appears entirely dark purple-brown; corona cream or buff-coloured with dark purplish narrow margin; May to July. Mesophytic habitats. De Wet PRE 50943.

W S C N E

zebrina N.E. Br. subsp. **magniflora** (E. Phillips) L.C.

Leach

(= *H. zebrina* N.E. Br. var. *magniflora* E. Phillips)

Succulent perennial herb, up to 120 mm tall. Plants taller, more robust with mostly 4-angled stems. Flowers

± twice the size of those of subsp. *zebrina* and up to 85 mm in diameter. *Flowers yellowish white, marked with transverse light purple-carminic broken bands; November to July*. Rocky, sandy soil. *Hardy 5648*.

W S C N E

Huerniopsis *N.E. Br.* (s. Afr.: 3 spp.) 6882000

Brown. 1904. F.T.A. 4, 1: 478–479, 485.
White & Sloane. 1937. *Stapelieae* 3: 970–974.

atrosanguinea (*N.E. Br.*) *A.C. White & B. Sloane*
(= *Caralluma atrosanguinea* N.E. Br.)

Succulent perennial herb, 50–80 mm tall. Flowers in fascicles of 2 or 3. Corolla lobes 15–20 mm long. Outer corona of 5 short lobes, inner coronal lobes linear-terete, several times as long as anthers. *Flowers greyish green mottled with purplish outside, rich deep blackish crimson inside; corona dull orange-yellow; November to June*. Sandy soil in dry bushveld. *Codd 6580*.

W S C N E

Kanahia *R. Br.* (s. Afr.: 1 sp.) 6780000

Brown. 1904. F.T.A. 4, 1: 296–297.
Field *et al.* 1986. *Nord. J. Bot.* 6, 6: 787–792.

laniflora (*Forssk.*) *R. Br.*
(= *K. glaberrima* N.E. Br.)

Shrub, 0.9–1.2 m high. Corolla lobes up to 9–15 mm long. Corona 3, 0–5.5 mm high, lobes sometimes very deeply grooved on upper surface so as to appear paired. Follicles mostly in pairs, fusiform. *Flowers white; October to July*. Along sandy or rocky riverbeds. *Codd & Dyer 4658*.

W S C N E

Macropetalum *Burch. ex Decne.*
(s. Afr.: 1 sp.) 6865000

Brown. 1909. F.C. 4, 1: 798–799.

burchellii *Decne.* var. **grandiflora** *N.E. Br.*

Perennial herb, 300–450 mm tall. Corolla sparsely and minutely puberulent outside, lobes 35 mm long, reflexed. Corona lobes exerted from corolla. *Flowers green or dull yellow; November to February*. Grassland. *Vahrmeyer 154*.

W S C N E

Miraglossum *Kupicha* (s. Afr.: 7 spp.) 6778020

Kupicha. 1984. *Kew Bull.* 38: 599, 625–633.

davyi (*N.E. Br.*) *Kupicha*
(= *Schizoglossum davyi* N.E. Br.)

Perennial herb, 0.3–0.6 m high. Leaves lanate. Flowers more than 20 mm in diameter. Corolla lobes flat and

spreading, pilose with mixture of patent hyaline and brown hairs on outside. *Flowers grey-green; January*. Grassland on sand or heavy black loam. *Acocks 16611*.

W S C N E

laeve *Kupicha*

Perennial herb, 170–520 mm tall. Leaves glabrous. Corolla lobes convex and reflexed, appressed pubescent on outside with brownish hairs. Corona lobes resembling head of elephant with 'trunk' and 'ears'. *Flowers green; February*. In scrub. *Obermeyer 385*.

W S C N E

pulchellum (*Schltr.*) *Kupicha*
(= *Schizoglossum pulchellum* Schltr.)

Perennial herb, 200–550 mm tall. Leaves pubescent to pilose. Flowers less than 15 mm in diameter. Corona lobes ± circular; appendage stout, arising from ventral surface of lobe and curving back over its apex. Fruit bristly. *Flowers brownish green; corona green or white and green, appendage purple or brown; November to January*. Grassland. *Devenish 207*.

W S C N E

Orbea *Haw.* (s. Afr.: 17 spp.) 6885050

Leach. 1978. *Excelsa Tax. Ser.* 1: 10–61.

maculata (*N.E. Br.*) *L.C. Leach*
(= *Caralluma maculata* N.E. Br.)

Decumbent, tufted and succulent perennial herb. Corolla deeply lobed, cilia silvery white, ± 3 mm long. Corona lacking outer lobes, ± circular; the 5 inner lobes relatively narrow, widening at middle, ± broadly apiculate, equalling or slightly exceeding anthers. *Flowers greenish yellow with reddish purple spots; January to June*. In open usually sandy conditions. *Schweickerdt & Verdoorn 660*.

W S C N E

paradoxa (*I. Verd.*) *L.C. Leach*
(= *Stultitia paradoxa* I. Verd.)

Succulent dwarf perennial herb. Corolla smooth, campanulate, less than 40 mm in diameter; annulus erect around mouth of tube. *Flowers: base of tube dark red, lobes greenish white with pink to purple or dark red markings; outer lobes of corona dark red, inner lobes yellowish; May to June*. In areas of seasonal vleis. *Van Zanton PRE 50882*.

W S C N E

tapscottii (*I. Verd.*) *L.C. Leach*
(= *Stapelia tapscottii* I. Verd.,
= *Stultitia tapscottii* (I. Verd.) E. Phillips)

Succulent perennial herb. Inner corona lobes 4–5 mm long, produced into erect subclavate or clavate or horn-like extensions. Corolla verrucose-rugulose. Stem teeth long, ascending, up to 25 mm long. *Flowers brownish or fawn-coloured; November to May*. Bushveld. *Reynolds 1320*.

W S C N E

Orbeanthus *L.C. Leach* (s. Afr.: 2 spp.)

6885060

Leach. 1978. *Excelsa Tax. Ser. 1*: 71–74.**conjunctus** (*A.C. White & B. Sloane*) *L.C. Leach*
(= *Stultitia conjuncta* A.C. White & B. Sloane)

Creeping, succulent perennial herb. Corolla bicampanulate, somewhat urceolate above, smooth and glabrous, lobes subquadrate, broadly deltate at apex, united for two-thirds of their length. Inner corona lobes incumbent on anthers, not erectly produced above. *Flowers creamy white suffused with pink on outside, annulus and lower portion of tube inside crimson, upper portion and lobes flesh-coloured; corona crimson; November to January.* Ledges of steep rock cliffs. *Hardy 901.*

W S C N E

hardyi (*R.A. Dyer*) *L.C. Leach*
(= *Stultitia hardyi* R.A. Dyer)

Creeping succulent perennial herb. Corolla campanulate, lobes ovate-acuminate, very shortly united, papillose. Inner corona lobes much exceeding anthers, erectly produced above. *Flowers liver-coloured with yellowish markings; corona dark purple; October to December and in March.* Sprawl on rock ledges. *Bornmann PRE 50875.*

W S C N E

Orbeopsis *L.C. Leach* (s. Afr.: 8 spp.) 6885070

White & Sloane. 1937. *Stapelieae 1*: 348–363, 382; 3: 1181.
Dyer. 1969. *Flower. Pl. Afr. 40*: t. 1567.
Leach. 1978. *Excelsa Tax. Ser. 1*: 64–68.

caudata (*N.E. Br.*) *L.C. Leach* subsp. **rhodesiaca** (*L.C. Leach*) *L.C. Leach*
(= *Caralluma caudata* N.E. Br. subsp. *rhodesiaca* L.C. Leach)

Succulent perennial herb. Corolla without an evident tube. Outer lobes of corona widely spreading usually resting on corolla disc, inner lobes simple, closely incumbent on anthers, not at all produced above. *Flowers creamy to mustard-yellow, red to violet-spotted; November and March to April.* *Leslie H12178.*

W S C N E

gerstneri (*Letty*) *L.C. Leach* subsp. **elongata** (*R.A. Dyer*) *L.C. Leach*
(= *Caralluma gerstneri* Letty subsp. *elongata* R.A. Dyer)

Succulent perennial herb. Corolla with distinct campanulate tube and corona completely included. Inner corona lobes stoutly 3-horned. *Flowers creamy yellow to brown with mauve markings.* Mountainside. *Phillips sub PRE 50467.*

W S C N E

lutea (*N.E. Br.*) *L.C. Leach* subsp. **lutea**
(= *Caralluma lutea* N.E. Br.)

Decumbent succulent perennial herb. Corolla without tube. Outer horn of inner corona lobe ± erect, inner horn laterally compressed; outer corona lobes ± subquad-

rate, sometimes wider than long. *Flowers yellow; July to June.* Rocky outcrops, often in shade. *Codd 5487.*

W S C N E

melanantha (*Schltr.*) *L.C. Leach*

(= *Stapelia melanantha* Schltr.,
= *Caralluma melanantha* (Schltr.) N.E. Br.)

Succulent perennial herb. Corolla without a tube, ciliate. Inner corona lobes furcate or subfurcate at base from being excavated near base, 1- or more-horned, usually gibbous, tuberculate or echinulate. *Flowers purplish black; November to April.* Rocky outcrops or sandy flats in shade. *Codd 3722.*

W S C N E

valida (*N.E. Br.*) *L.C. Leach*

(= *Caralluma valida* N.E. Br.)

Succulent perennial herb. Corolla with tube prominently ciliate with pale very vibratile cilia. Inner corona lobes with an erect recurving horn, gibbous and crested towards base, tapering to small, obtuse apex or sometimes strap-shaped. *Flowering March.* *Thompson PRE 50577.*

W S C N E

Orphanthera *Wight* (s. Afr.: 2 spp.) 6862000Huber. 1967. *F.S.W.A. 114*: 46–47.**jasminiflora** (*Decne.*) *Schinz*

Decumbent shrub. Stems, leaves and peduncles hairy. Corolla tube 10–18 mm long, hairy in throat, lobes 6–12 mm long. Leaves ovate, lanceolate to linear. *Flowers green, white or cream; September to December and March to April.* Grassland. *Louw 2264.*

W S C N E

Pachycarpus *E. Mey.* (s. Afr.: 25 spp.) 6787010

Smith. 1988. *S. Afr. J. Bot. 54*: 399–439.
Nicholas & Goyder. 1990. *Bothalia 20*: 87–90.

appendiculatus *E. Mey.*

(= *Xysmalobium appendiculatum* (E. Mey.) D. Dietr.,
= *Gomphocarpus appendiculatus* (E. Mey.) Decne.)

Perennial herb, 220–500 mm tall. Leaf margins flat. Corolla lobes reflexed, spreading. Corona lobes with a pair of prominent keels at base, always as broad as or broader than high, apex of corona lobes prolonged into linear appendage-like point. *Flowers light green or greenish white, outer surface often lightly spotted with dull purple-brown flecks; corona light dull green; December.* Grassland. *Pott 5241.*

W S C N E

asperifolius *Meisn.*

(= *P. validus* (Schltr.) N.E. Br.,
= *P. inconstans* N.E. Br.)

Perennial herb, 0.30–1.06 m high. Leaf margins flat. Corolla lobes reflexed-spreading. Corona lobes with a

pair of fleshy keels that extend to apex or slightly beyond. Flowers dirty greenish white, often slightly tinted with purple; corona whitish dull green often tinted with purple; October to March. Grassland. Kluge 650.

W S C N E

campanulatus (Harv.) N.E. Br. var. **sutherlandii** N.E. Br.

(= *P. gerrardii* (Harv.) N.E. Br.,
= *Asclepias gerrardii* (Harv.) Schltr.)

Perennial herb, 0,15–0,60 m high. Leaf margins revolute. Inflorescence 3–10-flowered. Corolla 10–30 mm long with lobes 5–12 mm long. Corona lobes spreading horizontally, slipper-shaped with large proximal wings on adaxial surface of keel, 3,0–8,5 mm long. Style apex excavated and 5-crenate. Anther appendages 3–4 mm long, brown, oblong, obtuse. Flowers pale green or dull cream-green becoming cream-brown in older flowers; corona dark purple with pale yellow-cream keels; November to April. Grassland. Coetzer 145.

W S C N E

concolor E. Mey.

(= *Xysmalobium concolor* (E. Mey.) D. Dietr.,
= *Gomphocarpus concolor* (E. Mey.) Decne.)

Erect or decumbent perennial herb, 0,21–0,66(–0,92) m high. Leaf margins flat or undulate. Inflorescence (1)2(3)-flowered; lowermost inflorescence sessile or subsessile. Corolla broadly cup-shaped or ± campanulate. Corona lobes with a pair of short, erect, fleshy, contiguous keels, subfalcate, deltoid or ± oblong. Flowers purple-brown with tips tinged dull yellow or green or yellowish cream or green with brown-purple spots or with tips tinged purple; corona dull green or yellow, often tinged purple at base; October to January. Grassland. Codd 2265.

W S C N E

decorus N.E. Br.

Perennial herb, 170–460 mm tall. Leaf margins flat or rarely ± undulate. Inflorescences (2)3–5-flowered; lowermost inflorescence always pedunculate, peduncles 15–60 mm long. Corolla broadly cup-shaped. Corona lobes with a pair of prominent short keels on inner face. Flowers white to creamy white or yellowish; corona white or creamy white; November. Grassy slopes. Galpin 9379.

W S C N E

galpinii (Schltr.) N.E. Br.

(= *Gomphocarpus galpinii* Schltr.,
= *Asclepias galpinii* (Schltr.) Schltr.)

Perennial herb, 170–300 mm tall. Leaf margins flat. Corolla broadly and shortly cup-shaped. Corona lobes with 1 median keel on inner surface with sides reflexed and with linear tooth on each side at base, teeth spreading out from under anther wings. Flowers: basal part of corolla dull purple-brown, apical part yellowish green; corona dark purple-brown; November to December. Mountain grassland. Kluge 2087.

W S C N E

grandiflorus (L.f.) E. Mey. var. **tomentosus** (Schltr.)

N.E. Br.

(= *Gomphocarpus grandiflorus* (L.f.) Decne. var. *tomentosus* Schltr.)

Perennial herb, 200–500 mm tall. Whole plant villous-tomentose, hairs long and white. Leaf margins sometimes undulate. Corolla lobes globose, globose-urceolate or globose-campanulate. Corona lobes with a pair of prominent keels on inner surface; keels extending to middle or beyond middle of lobe, but not to or beyond apex. Flowers entirely yellow or lightly or heavily spotted dark purple-brown; corona yellow with purple-brown spots; January to April. Grassland. Codd 10046.

W S C N E

macrochilus (Schltr.) N.E. Br.

(= *Asclepias macrochila* Schltr.)

Perennial herb, 140–330 mm tall. Leaf margins sometimes undulate. Corolla cup-shaped. Corona lobes erect from short spreading claw-like base, with a pair of slight or ± inconspicuous keels, not nearly reaching base of anthers. Flowers greenish yellow and mottled with brown or purple spots; corona lemon-yellow; November to December. Mountain grassland. Henrici 289.

W S C N E

rigidus E. Mey.

(= *Xysmalobium rigidum* (E. Mey.) D. Dietr.,
= *Asclepias rigida* (E. Mey.) Schltr.)

Perennial herb, 220–500 mm tall. Leaf margins undulate. Corolla cup-shaped or subglobose. Corona ± erect or slightly incurved from shortly spreading base, lobes without keels or appendages on inner surface, apex of lobes entire or 3-lobed. Flowers pale greenish stained with purple down back; corona dark chocolate-colored; November. Grassland. Gilfillan 222.

W S C N E

scaber (Harv.) N.E. Br.

(= *Gomphocarpus scaber* Harv.,
= *Asclepias scabra* (Harv.) Schltr.)

Perennial herb, 0,30–0,75 m high. Leaf margins flat. Corolla lobes spreading or reflexed-spreading. Corona lobes with a pair of prominent keels at base and prolonged beyond keels; dilated at base with 2 deltoid or rhomboid-rounded auricles. Flowers white to cream or dull yellow; corona white or cream; November to December. Grassland. Pott 4897.

W S C N E

schinzianus (Schltr.) N.E. Br.

(= *Gomphocarpus schinzianus* Schltr.,
= *Asclepias schinzianus* (Schltr.) Schltr.)

Perennial herb, 200–400 mm tall. Leaf margins undulate. Corolla cup-shaped. Corona lobes with a pair of prominent short, erect keels on inner surface, without auricles, apical part orbicular or suborbicular, concave, hood-like and upcurved. Flowers white or cream and purple-tinted at tips on back; corona white or pale lemon-yellow with violet-purple stripe down inner face; September to January and in June. Grassland, sometimes grassy slopes. Hanekom 1504.

W S C N E

suaveolens (Schltr.) Nicholas & Goyder

(= *Asclepias macra* Schltr.,
= *A. suaveolens* (Schltr.) Schltr.)

Perennial herb, 205–275(–400) mm tall. Leaf margins revolute. Inflorescence 5–10-flowered. Corolla 11,5–16,0 mm long, lobes (3,5–)5,0–7,0 mm long. Corona lobes 3,2–4,0 mm long, saccate-cucullate without large proximal wings on adaxial surface of keel. Style apex excavated and 5-crenulate. Anther appendages 1,3–2,0 mm long, tongue-like, apex rounded. *Flowering December to January*. Grassland. *Scheepers 15043*.

W S C N E

transvaalensis (Schltr.) N.E. Br.

(= *P. insignis* (Schltr.) N.E. Br.,
= *Asclepias transvaalensis* (Schltr.) Schltr.)

Perennial herb, 0,23–0,73 m high. Leaf margins rarely $\pm$ undulate. Inflorescences (2)3–5-flowered; lowermost inflorescence always pedunculate, peduncles (10–)15–60 mm long. Corolla broadly cup-shaped. Corona lobes with a pair of prominent short keels on inner surface. *Flowers purple-brown, dull cream or cream with brown streaks, tinged green or brownish green; corona dark purple-brown; October to December*. Grassland. *Pott 5366*.

W S C N E

Pachycymbium L.C. Leach (s. Afr.):

8 spp.)

6885080

Dyer. 1935. Flower. Pl. Afr. 15: t. 600.
Phillips. 1950. Flower. Pl. Afr. 28: t. 1085.
Leach. 1978. Excelsa Tax. Ser. 1: 71.
Lavranos. 1984. Cactus Succ. J., U.S. 56: 196–197.
Gilbert. 1990. Bradleya 8: 20–28.

carnosum (Stent) L.C. Leach

(= *Caralluma carnosum* Stent)

Decumbent succulent perennial herb. Corolla relatively small (6 to $\pm$ 10 mm in diameter, usually $\pm$ 8 mm). *Flowers whitish, pale grey-green or buff, with brownish to maroon markings; January to April*. Rocky mountainsides. *Verdoorn & Dyer 3395*.

W S C N E

keithii (R.A. Dyer) L.C. Leach

(= *Caralluma keithii* R.A. Dyer,
= *C. schweickerdtii* Oberm.)

Succulent perennial herb, 70–90 mm tall. Corolla relatively large (up to 20 mm in diameter, usually $\pm$ 16 mm). *Flowers maroon with whitish markings; December to April*. Rocky outcrops. *Codd 7720*.

W S C N E

lancasteri Lavranos

Succulent perennial herb, up to 120 mm tall. Corolla 18 mm in diameter. Annulus prominent, vaguely pentagonal. Corona biseriate, slightly exceeding corona tube in height. Inner corona lobes very fleshy, acutely deltoid. *Flowers bright golden yellow; corona bright*

yellow. Sandy soil in *Colophospermum* bush. *Percy-Lancaster 1431* (type in NBG; no material in PRE).

W S C N E

rogersii (L. Bolus) M.G. Gilbert

(= *Caralluma rogersii* (L. Bolus) E.A. Bruce & R.A. Dyer,
= *Stapelia rogersii* L. Bolus)

Succulent perennial herb, up to 100 mm tall. Stems 4-angled. Flowers in 3 or 4 fascicles along stem. Flowers 30–35 mm in diameter. Corolla ciliate. Inner corona lobes subdivided into very long filiform segments, coiled at tips. *Flowers pale dull yellowish; December to May*. Sandy soil in bushveld scrub. *Van der Schijff 3398*.

W S C N E

Parapodium E. Mey. (s. Afr.: 3 spp.) 6762000

Brown. 1909. F.C. 4,1: 558–560.

costatum E. Mey.

Herb, 80–300 mm tall. Leaves lanceolate or oblong, flat or very slightly undulate. Style apex exerted beyond anther appendages. *Flowers dull purple-brown or violaceous outside, dull green within, corona white; October to January*. Grassland. *Codd 7591*.

W S C N E

simile N.E. Br.

Herb, 150–250 mm tall. Leaves oblong or oblong-linear, flat, not crisped. Style apex not exerted beyond anther appendages. *Flowers creamy brown, corona white; November*. Sandy loam soil. *Pegler 1022* (type).

W S C N E

Pentarrhinum E. Mey. (s. Afr.: 2 spp.) 6810000

Huber. 1967. F.S.W.A. 114: 47–48.

abyssinicum Decne.

Perennial, twining herb. Corona twice as high as staminal column, lobes thin, with curved tooth not projected over staminal column. *Flowers greenish; March*. Bushveld. *Bredenkamp 1501*.

W S C N E

insipidum E. Mey.

Perennial, twining herb. Corona as high as staminal column, lobes thick and fleshy, tooth projected over staminal column. *Flowers reddish brown; October to May*. Mixed grassland. *Codd & Dyer 4685*.

W S C N E

Pergularia L. (s. Afr.: 1 sp.)

6917000

Dyer. 1950–51. Flower. Pl. Afr. 28: t. 1119.
Huber. 1967. F.S.W.A. 114: 48.

daemia (Forssk.) Chiov. var. **daemia**(= *P. extensa* (Jacq.) N.E. Br.)

Climbing herb. Stems hairy, hairs erect, rough, long (1 mm or more, sometimes shorter). Leaf blades 20–120 mm long. *Flowers opening towards evening and at night; green, stained with brownish purple on outside; corona white; September to June.* Bushveld. Codd 4110.

W S C N E

Periglossum Decne. (s. Afr.: 4 spp.) 6783010

Brown. 1909. F.C. 4,1: 582–585.

Dyer. 1942. Flower. Pl. Afr. 22: t. 844.

angustifolium Decne.

Perennial herb, 0,30–0,75 m high. Blade of corona lobes sagittate-ovate, as long as stalk. Alternating filaments filiform, 1,5–3,0 mm long. *Flowers green, tinged with purple; corona white and purple-tipped; October to December and in March.* Marshy grassland. Verdoorn 1914.

W S C N E

kassnerianum Schltr.

Perennial herb, 150–300 mm tall. Blade of corona lobes oblong or lanceolate-oblong to elliptic-oblong, 2–2,5 times as long as stalk. Filaments alternating with corona lobes minute. *Flowers pale green, tinged with purple; corona green; November to March.* Grassy vleis. Codd 5738.

W S C N E

Riocreuxia Decne. (s. Afr.: 8 spp.) 6875000

Dyer. 1980. F.S.A. 27,4: 84–88.

Dyer. 1983. *Ceropegia*, *Brachystelma* & *Riocreuxia* in South Africa.**aberrans** R.A. Dyer(= *Ceropegia brachysiphon* H.E. Huber)

Twining perennial herb. Corolla campanulate, 18–20 mm long, tube shorter than lobes, lobes mostly free at tips at maturity. Inner corona lobes greatly exceeding staminal column. *Flowers cream; November to December.* Exposed quartzite ridges. Drews 205.

W S C N E

burchellii K. Schum.(= *R. flanaganii* Schltr. subsp. *segregata* R.A. Dyer,= *Ceropegia burchellii* (K. Schum.) H.E. Huber subsp. *burchellii*)

Twining perennial herb. Staminal column $\pm$ 1 mm tall. Corona with 5 small pockets with very slightly spreading outer margin, minutely notched with teeth face to face. Inner corona lobes half to full height of anthers. *Flowers greenish yellow to white; October to March.* Riverine bush or scrub. De Winter 8328.

W S C N E

picta Schltr.(= *Ceropegia picta* (Schltr.) H.E. Huber)

Twining perennial herb. Flower bud abruptly acuminate-tailed. Corona of 5 broad pockets confluent at base and with ovate outer margin. Inner corona lobes obsolete. *Flowers green with purple, brown or purple-brown veins; November to April.* Climbing in forest margins. Hemm 535.

W S C N E

torulosa Decne.(= *R. torulosa* Decne. var. *longidens* N.E. Br.,= *R. torulosa* Decne. var. *obsoleta* N.E. Br.)

Twining perennial herb. Staminal column 1,5–2,0 mm tall, with 5 simple, filiform or linear, bifid or toothed, radiating outer corona lobes. Inner corona lobes minute or obsolete. *Flowers pale yellow, tinged with red or purplish; November to March.* Climbing in forest margins. Stirton 7364.

W S C N E

Sarcostemma R. Br. (s. Afr.: 2 spp.) 6849000

Brown. 1909. F.C. 4,1: 755–756.

viminale (L.) R. Br.

Trailing or twining perennial shrub with succulent, leafless stems becoming woody. Umbels lateral and terminal, sessile; many-flowered. *Flowers greenish white or sulphur-coloured; July to June.* Bushveld, woodland. Leistner 137.

W S C N E

Schizoglossum E. Mey. (s. Afr.: 26 spp.) 6778000

Brown. 1909. F.C. 4,1: 588–662.

Kupicha. 1984. Kew Bull. 38,4: 602–624.

atropurpureum E. Mey. subsp. **atropurpureum**

Perennial herb, 0,6–1,3 m high. Corolla lobes cucullate, 4,5–7,0 mm long. Corona appendage 1–2 mm long, appendage greatly exceeding subtending lobe; corpusculum without flanges. *Flowers dark brown outside, green striped brown inside; corona green; January to March.* In tall grass or scrub vegetation, usually at forest margins or beside streams. Bruce 502.

W S C N E

bidens E. Mey. subsp. **galpinii** (Schltr.) Kupicha(= *S. galpinii* Schltr.)

Perennial herb, 0,30–0,66 m high. Leaves verticillate or irregularly arranged, 1–4 mm wide. Corolla lobes 3,5–4,5 mm long, replicate, ventral surface of corolla lobes glabrous. Anther appendages hidden beneath overhang of gynostegium. *Flowers pale green; corona white; October to February.* In rocky grassland. Noome 20811.

W S C N E

bidens *E. Mey.* subsp. **pachyglossum** (Schltr.) Kupicha
(= *S. pachyglossum* Schltr. var. *abbreviatum* N.E. Br.,
= *S. pachyglossum* Schltr. var. *pachyglossum*)

Perennial herb, 0,2–0,9 m high. Leaves verticillate or irregularly arranged; 1,5–9,0 mm broad and much longer than internodes. Corolla lobes replicate, ventral surface of corolla lobes glabrous. Anther appendages hidden beneath overhang of gynostegium. Inflorescences sessile, with numerous flowers. *Flowers yellowish green; corona white; January.* In grassland, often in rocky areas. *Devenish 806.*

W S C N E

bidens *E. Mey.* subsp. **productum** (N.E. Br.) Kupicha
(= *S. pachyglossum* Schltr. var. *productum* N.E. Br.)

Perennial herb, 0,30–0,52 m high. Leaves verticillate or irregularly arranged; 5–9 mm wide. Corolla lobes 5–6 mm long, replicate, ventral surface of corolla lobes glabrous. Anther appendages hidden beneath overhang of gynostegium. *Flowers olive-green with darker veins or pale purple; corona white; December to January.* Mountain grassland, in fissures in quartzite. *Codd 9463.*

W S C N E

capitatum Schltr.

Perennial herb, up to 300 mm tall. Umbel solitary, terminal. Corona lobes produced into long subulate or filiform point behind shorter subulate-filiform appendage on inner face. *Flowering December. Schlechter 3905 (type).*

W S ? C N E

cordifolium *E. Mey.*
(= *S. divaricatum* N.E. Br.,
= *S. hirsutum* Turcz.)

Perennial herb, 0,15–0,60 m high. Leaves well spaced on stem, decussate. Corolla 5–7 mm long, corolla lobes replicate. Corona with bifid appendages. Anther appendages appressed against top of gynostegium and clearly visible. *Flowers green lined with brown or yellow; corona white, beige or pale green; September to December.* Open grassland. *Mogg 17599.*

W S C N E

garcianum Schltr.

Perennial herb, 150–260 mm tall. Leaves linear, 4 mm broad, with revolute margins; glabrous or slightly puberulous. Corolla lobes ascending; glabrous; 4,0–4,5 mm long. Corona 2 mm long, appendage up to 2 mm with 2 stout, diverging keels. *Flowers pale olive-green; corona white with purple at base; November to January.* Open woodland. *Lang sub Tvl. Mus. 32223.*

W S C N E

hamatum *E. Mey.*

(= *S. hamatum* *E. Mey.* var. *elegans* N.E. Br.,
= *S. hamatum* *E. Mey.* var. *pallidum* N.E. Br.)

Perennial herb, 0,25–0,60 m high. Corolla 8–11 mm long, lobes slightly cucullate. Corona appendage 2–3 mm long, appendage greatly exceeding subtending lobe; corpusculum with broad opaque flanges. *Flowers*

greenish brown or purplish outside; inside green striped with reddish brown or purple; corona green; November. Grassland, often on dry slopes. *Anderson A65.*

W S C N E

linifolium Schltr. var. **linifolium**

Perennial herb, 150–380 mm tall. Leaves 0,5–2,0 mm broad, filiform, glabrous. Corolla lobes spreading with recurved margins or replicate, 2–4 mm long; glabrous outside, minutely puberulous inside. Corona lobes 1,5 mm long, thick and fleshy. *Flowers greenish; December.* Grassy slopes. *Galpin 14654.*

W S C N E

nitidum Schltr.

(= *S. wallacei* Schltr.)

Perennial herb, 70–300 mm tall. Leaves decussate. Corolla 6–10 mm long, lobes replicate. Appendages of corona lobes several-toothed. Anther appendages appressed against sides of gynostegium or hidden beneath its overhang. *Flowers yellow, green, greenish brown and white striped brown or pink; corona yellow or white; October to December and in June.* In damp grassland, in marshes or by streams. *Devenish 1064.*

W S C N E

periglossoides Schltr.

Perennial herb, 0,23–0,60 m high. Umbels sessile. Corolla lobes spreading or suberect, 4 mm long, puberulous outside, glabrous or minutely puberulous inside. Corona lobes up to 2 mm long, slightly gibbous on back. *Flowers green with purple-brown outside; whitish inside; September to January.* Grassland near vleis. *Codd 3633.*

W S C N E

stenoglossum Schltr. subsp. **latifolium** Kupicha

Perennial herb, 160–510 mm tall. Leaves up to 15 mm broad. Corolla lobes flat, glabrous inside. Corona without appendages or with appendages shorter than to slightly longer than subtending lobe. Anther appendages 1,0–1,5 mm long, inflexed over gynostegium. *Flowers dark brown or maroon, striped; rarely yellow-green with brown stripes; November to December.* Mountain grassland. *Liebenberg 6927.*

W S C N E

Secamone *R. Br.* (s. Afr.: 5 spp.) 6860000

Brown. 1909. F.C. 4,1: 543–547.

Bullock. 1954. Kew Bull. 1954: 368–369.

Ross. 1974. Bothalia 11: 277.

alpini Schult.

Scrambling shrub. Leaves 7–25 mm broad, oblong, elliptic or lanceolate. Corolla lobes white-pubescent inside. Style apex equalling or shortly exceeding anther tips, entire. *Flowers white, yellow or greenish white; September to February.* Forest, often riverine. *Scheepers 727.*

W S C N E

filiformis (L.f.) J.H. Ross
(= *S. frutescens* (E. Mey.) Decne.)

Twining shrub. Leaves 1,5–4,0 mm broad, linear. Corolla lobes glabrous inside, longer than flattened or saucer-shaped united part. Style apex cushion-like, just exceeding anther tips. *Flowers greenish or yellow; December to February.* Forests or kloofs. *Codd & Dyer 8987.*

W S C N E

gerrardii Harv. ex Benth.

Woody climber. Leaves 10–20 mm broad, oblong or oblong-lanceolate. Corolla lobes glabrous inside, 5 mm long. Style apex exerted much beyond anther tips, 2-lobed. *Flowers greenish, cream, pink; October to November.* Edge of forests or bush. *Acocks & Hafström 1144.*

W S C N E

parvifolia (Oliv.) Bullock
(= *S. zambesiaca* Schltr. var. *parvifolia* N.E. Br.)

Twining shrub. Leaves 7–15 mm broad, narrowly lanceolate to ovate-lanceolate. Corolla lobes glabrous inside, 2 mm long. Style apex exerted much beyond anther tips, entire or minutely bifid. *Flowers white or yellow; November to February.* In bush, often on streambanks or riverbanks. *Reid 1158.*

W S C N E

Sisyranthus E. Mey. (s. Afr.: 13 spp.) 6861000
Brown. 1909. F.C. 4,1: 786–794.

huttoniae (S. Moore) S. Moore

Herb, 300–410 mm tall. Umbels 2 or 3, racemously arranged, 6–15-flowered. Corolla lobes glabrous inside; tube densely bearded with hairs in mouth and throat. Corona lobes longer than and incurved or connivent over staminal column. *Flowers greenish with red; October to November.* Grassland. *Hilliard & Burt 18448.*

W S C N E

imberbis Harv.

Herb, 380–500 mm tall. Umbels racemose. Corolla lobes glabrous inside, tube with only 5 small tufts of deflexed hairs in throat. Corona lobes shorter than or not exceeding anthers. *Flowers yellow or greenish; October to December.* Wet grassland. *Germishuizen 3494.*

W S C N E

randii S. Moore

Herb, 0,45–0,75 m high. Leaves filiform, 0,5–1,0 mm broad. Corolla lobes and tube glabrous inside. *Flowers greenish, white, yellowish; September to March.* Marshy areas in grassland. *Codd 4721.*

W S C N E

Sphaerocodon Benth. (s. Afr.: 2 spp.) 6896000
Brown. 1903. F.T.A. 4,1: 412.

natalense (Meisn.) Hook. f.
(= *S. obtusifolium* Benth.)

Perennial herb, 0,3–0,9 m high. Leaves oblong to elliptic, usually very obtuse and apiculate; broadly or cuneately rounded at base. Corolla tube campanulate, 5 mm long. *Flowers dark purple; August and November to March.* Kloofs or mountainsides. *Buitendag 1025.*

W S C N E

Stapelia L. (s. Afr.: 45 spp.) 6885000
Leach. 1985. *Excelsa Tax.* Ser. 3: 1–157.

clavicorona I. Verd.

Succulent perennial herb, up to 250 mm tall. Inner corona lobes distinctly biclavate, short, 3 mm long, incumbent on anthers. *Flowers yellowish brown, transversely red-brown rugulose; corona black; July and October to March.* Mountains. *Leach 5591.*

W S C N E

gettliffei Pott-Leend.

Procumbent, succulent perennial herb. Leaves up to and sometimes longer than 10 mm. Stems 10–15 mm thick. Corolla rotate, somewhat depressed at centre, there becoming funnel-shaped or shallowly cup-shaped. Inner surface of corolla hairy. *Flowers purplish, transversely cream to yellowish, rarely wholly cream-coloured; corona dark purple; July to June.* Sprawling in shade of bushes on sandy and occasionally calcareous soils. *Codd 8657.*

W S C N E

gigantea N.E. Br.
(= *S. marlothii* N.E. Br.)

Succulent perennial herb, 150–250 mm tall. Corolla rotate or limb sometimes shallowly campanulate, 125–400 mm in diameter, thinly covered with long, weak, slightly crisped hairs, longest on margins. Inner corona lobes with an erect horn and an erect to erectly spreading, broad dorsal wing. *Flowers buff to reddish or purplish, narrowly red-brown to purple lined; corona dark purple; November to May.* Edges of bush clumps or more open grassland. *Theron 1080.*

W S C N E

kwebensis N.E. Br.

Succulent perennial herb, up to 150 mm tall. Pedicel short, shorter than 5 mm. Corolla rotate, 15–30(–45) mm in diameter. Inner corona lobes glabrous, oblong, subacute, obtuse or rarely emarginate at apex. *Flowers yellow-brown to blackish brown, sometimes with greenish tinge; November to April.* Dry areas. *Leach 8455.*

W S C N E

leendertziae N.E. Br.(= *S. wilnaniae* C.A.Lückh.)

Shortly decumbent, succulent perennial herb. Stems densely pubescent. Corolla deeply globose-campanulate. Inner corona lobes horn-like, much exceeding anthers, with an erect dorsal wing arising near its base. *Flowers dark purple inside; outer lobes of corona brown, inner lobes dark purple; November to April.* Rocky outcrops, often in shade of trees or bushes. *Leendertz 11264.*

W S C N E

Stenostelma Schltr. (s. Afr.: 2 spp.) 6789000

Brown. 1909. F.C. 4,1: 586–588.

Bullock. 1952. Kew Bull. 8: 417.

Kupicha. 1984. Kew Bull. 38: 599, 668.

capense Schltr.(= *Schizoglossum capense* (Schltr.) H.E. Huber,= *Krebsia stenoglossa* (Schltr.) Schltr.)

Perennial herb, 150–250 mm tall. Inflorescence pedunculate; pedicels 3–6 mm long. Corona lobes 5 mm long. *Flowers yellowish green; corona dark purple with whitish margins; September to December.* Grassland. *Zambatis 337.*

W S C N E

corniculatum (E. Mey.) Bullock(= *Schizoglossum corniculatum* (E. Mey.) R.A. Dyer,= *Krebsia corniculata* (E. Mey.) Schltr.)

Perennial herb, 100–200 mm tall. Inflorescence subsessile; pedicels 2 mm long. Corona lobes 6–8 mm long. *Flowers whitish; corona purple-brown with paler margins; November to March and in June.* Grassland. *Bredenkamp 1867.*

W S C N E

Tavaresia Welw. (s. Afr.: 3 spp.) 6880000

Brown. 1909. F.C. 4,1: 901.

Dyer. 1954. Bothalia 6: 415–416.

Leach. 1974. Kirkia 9: 350–355.

barklyi (Dyer) N.E. Br.(= *Decabelone barklyi* Dyer,= *D. grandiflora* Dinter)

Perennial succulent herb, 75–100 mm tall. Flowers tubular, glabrous, papillate within, segments of outer coronal lobes long, attenuate, terminated by subglobose knobs. *Flowers outside pale greenish or greenish white, spotted with purple-red; inside pale yellowish with purple-red spots, base purple-red; corona purple-brown; November to March.* Dry conditions but often in shade of trees. *Leach 10594.*

W S C N E

meintjesii R.A. Dyer(= *Decabelone meintjesii* (R.A. Dyer) Rowl.)

Tufted dwarf perennial succulent herb, 80–100 mm tall. Flowers ± campanulate, ciliate, pubescent not papillate within. Segments of outer coronal lobes not terminated by subglobose knob. *Flowers cream-col-*

oured within with spots and transverse bands of maroon, maroon on margins; corona maroon; January to June. Rocky outcrops. *Steenkamp/Meintjes 523.*

W S C N E

Telosma Colville (s. Afr.: 1 sp.) 6917010

Brown. 1909. F.C. 4,1: 776–777.

africana (N.E. Br.) N.E. Br.

Glabrous twining herb. Leaves broadly ovate, subtruncate to cordate at base, acute. Corolla glabrous outside, densely hairy at throat and upper part inside. *Flowers green, yellow; October to January.* Bushveld and forest. *Renny 129.*

W S C N E

Tenaris E. Mey. (s. Afr.: 4 spp.) 6921000

Brown. 1909. F.C. 4,1: 795–798.

Bullock. 1954. Kew Bull. 1953: 357.

chlorantha Schltr.

Perennial herb, 300–500 mm tall. Flowering part of stem with leaves. Flowers in fascicles of 3–5 at nodes. Corolla lobes linear-filiform, 0,5 mm broad. Inner corona lobes shorter than or subequalling anthers. *Flowers purple-brown; November to March.* Grassy hillsides. *Acocks 18724.*

W S C N E

filifolia N.E. Br.

Perennial herb, 0,50–0,75 m high. Flowering part of stem with leaves. Flowers in slender 2–6-noded racemes. Corolla lobes filiform, 0,5 mm broad. Inner corona lobes much longer than anthers. *Flowers greenish outside, purple-brown inside; November to December.* Grassland on hillsides. *Kluge 2305.*

W S C N E

rubella E. Mey.(= *T. simulans* N.E. Br.)

Perennial herb, 150–500 mm tall. Flowering part of stem leafless or with filiform bracts. Sepals lanceolate to filiform-subulate from broader base. Corolla lobes linear-spathulate, 1,5–2,0 mm broad at apex. *Flowers pink; November to April.* Grassland, often at edge of vleis. *Acocks 16615.*

W S C N E

Tridentea Haw. (s. Afr.: 17 spp.) 6885090

Leach. 1980. Excelsa Tax. Ser. 2: 1–13.

gemmiflora (Masson) Haw.(= *Stapelia gemmiflora* Masson)

Succulent perennial herb, up to ± 70 mm tall. Leaves large, up to 10 mm long. Pedicels short, 10–20 mm

(rarely up to 40 mm) long. Corolla lobes prominently ciliate. Outer corona lobes deeply 3-dentate, inner lobes 2-horned. *Flowers green outside, purple-spotted, brownish towards apex of lobes, inside dark brown to almost black or purple-black with scattered small irregular yellowish or buff markings; corona yellow marked with dark purple.* Red sandy soil. *Leistner 1629.*

W S C N E

Tylophora *R. Br.* (s. Afr.: 10 spp.) 6899000

Brown. 1909. F.C. 4,1: 765–771.

Bullock. 1964. Flower. Pl. Afr. 36: t. 1435.

Dyer. 1971. Flower. Pl. Afr. 41: t. 1617.

anomala *N.E. Br.*

Twiner. Leaf blade 30–75 mm long, base cordate. Corolla glabrous outside, puberulous within. *Flowers light green or dull white; December.* Edge of bushes. *Louw 2405.*

W S C N E

coddii *Bullock*

Subshrub, up to 0,6 m high. Leaves $\pm$ 35 mm long. Cymes few-flowered, lateral at upper nodes. Corolla contorted, saucer-shaped with broadly campanulate tube. *Flowers pale brownish green but blood-red at base inside; January to February.* Dry rocky slopes or rock crevices. *Codd 8350.*

W S C N E

flanaganii *Schltr.*

Climber. Leaf blade 40–90 mm long. Peduncle dichotomously or paniculately much-branched, each branch bearing 2–4 small umbel-like cymes. Corolla glabrous. *Flowers purple to crimson; corona purple-brown; December to April.* Forests. *Scheepers 1188.*

W S C N E

lycioides (*E. Mey.*) *Decne.*

Twiner. Leaf blade 15–65 mm long. Corolla with very minute puberulence on inner face. Peduncle bearing 1 terminal umbel only. Bracts 2–8 mm long, very conspicuous, forming a kind of involucre. *Flowers white, cream, greenish yellow or light yellow; November to March.* Forest, wooded kloofs and riverine forest. *Codd 8179.*

W S C N E

Woodia *Schltr.* (s. Afr.: 3 spp.) 6790000

Brown. 1909. F.C. 4,1: 561–563.

singularis *N.E. Br.*

Perennial herb, up to 450 mm tall. Corona lobes subquadrate, with square shoulders and thick incurved obtuse middle point. *Flowers greenish tinted with purple-brown outside; November to January.* *Lang Tvl.Mus. 32243.*

W S C N E

Xysmalobium *R. Br.* (s. Afr.: 21 spp.) 6777000

Brown. 1909. F.C. 4,1: 566–581.

Bullock. 1952. Kew Bull. 8: 414.

acerateoides (*Schltr.*) *N.E. Br.*

Perennial herb, 0,6–0,8 m high. Leaves 25–100 mm long, lanceolate, ovate or oblong-ovate, roughly pubescent on both sides. Umbels pedunculate, 2 in a terminal pair to 6, lateral and terminal. Corolla lobes suberect, with longitudinally divided gibbosity on inner face. *Flowers greenish yellow; October to January.* Grassland. *Codd 8104.*

W S C N E

asperum *N.E. Br.*

Perennial decumbent herb. Leaves up to 45 mm long, ovate, ovate-lanceolate or oblong-lanceolate, scabrid on both sides. Umbels pedunculate, 2–6, lateral and terminal. Corolla lobes very spreading or reflexed, glabrous. *Flowers green with purple tips; corona orange or dull yellow; October to January.* Grassland. *Pole-Evans 12915.*

W S C N E

brownianum *S. Moore*

Perennial herb, up to 300 mm tall. Leaves 4–14 times as long as broad; varying from linear to narrowly elongate or lanceolate, glabrous; crisped on margins. Umbels sessile, lateral. Corolla glabrous on inner face; corona lobes $\pm$ as long as broad. *Flowers brown; November to December.* Grassland. *Pole-Evans 4721.*

W S C N E

confusum *Scott-Elliot*

Perennial herb, 0,6–0,9 m high. Leaves 1,5–3 times as long as broad, elliptic or oblong; glabrous. Umbels all sessile, numerous, racemosely arranged along stem. *Flowers yellowish green; January.* Grassland. *Scheepers 1089* (flowers), *Munro s.n., sub PRE 29412* (fruit).

W S C N E

involucratum (*E. Mey.*) *Decne.*

Perennial herb, 100–300 mm tall. Leaves 11–40 times as long as broad, linear. Umbels pedunculate, terminal. Corolla reflexed, glabrous on inner face. Corona lobes shorter than staminal column. *Flowers yellowish green; September and December to January.* Grassland. *Codd 8308.*

W S C N E

orbiculare (*E. Mey.*) *D. Dietr.*

Perennial herb, 0,3–0,9 m high. Leaves 1–3 times as long as broad; oblong, ovate, elliptic or lanceolate; glabrous. Umbels pedunculate, numerous and racemosely arranged along stem. *Flowers brownish; January to February.* Grassland. *Pole-Evans 4727.*

W S C N E

parviflorum Harv. ex Scott-Elliot

Perennial herb, 80–250 mm tall. Leaves 1.5–3 times as long as broad, ovate or ovate-lanceolate, thinly and harshly pubescent. Umbels pedunculate, subaxillary and terminal. Corolla lobes suberect; without gibbosity on inner face. *Flowers greenish white, sometimes purplish down back; corona yellow; October to December.* Grassland. *Codd & De Winter 3352.*

W S C N E

stockenstromense Scott-Elliot

Perennial herb, 170–400 mm tall. Leaves 4–14 times as long as broad, lanceolate-attenuate, glabrous. Umbels pedunculate, lateral and terminal. Corolla lobes erect or suberect, glabrous outside, densely white-pu-

bescent at recurved tips on inner face. *Flowers green, tipped with brown; December.* Grassland. *Collins 13711.*

W S C N E

undulatum (L.) Aiton f.

(= *X. ensifolium* Burch. ex Scott-Elliot)

Perennial herb, 0.9–1.5 m high. Leaves 4–14 times as long as broad, lanceolate or ovate-lanceolate, margins undulate; pubescent. Umbels pedunculate, lateral and terminal. Corolla lobes erect or suberect, pubescent outside; densely white-pubescent at recurved tips on inner face. *Flowers dull green; corona dull white, tinged with purple; November to March.* Grassland. *Dyer 4766* (flowers), *Gerstner 6497* (fruit).

W S C N E

ASTERACEAE

Herbs, shrubs or rarely trees. Leaves usually alternate, rarely opposite, often in a basal rosette, without stipules. Flowers crowded into dense heads subtended by an involucre of bracts arranged in 1 or more whorls, the whole resembling a single flower. Flowers of 2 types: strap-like (ray flowers), and $\pm$ tubular (disc flowers). Calyx (referred to as the 'pappus' in this family) modified into scales, bristles, hairs, or absent. Petals 5, united. Stamens 5, arising from and mostly included in corolla tube; anthers united into a tube around style. Ovary inferior, unilocular with 1 ovule; style 2-branched. Fruit dry, often crowned with a tuft of hairs (pappus), rarely a drupe.

Key to the tribes of the family Asteraceae after Jeffrey & Pope in F.Z. 6, 1: 2–4 (1992).

- 1a Corollas all strap-shaped, equally 5-toothed at apex **Lactuceae** (p. 288)
- 1b Corollas not strap-shaped, or if some strap-shaped then these with 4 or fewer equal or unequal apical teeth 2
- 2a Style arms with conspicuous papillose appendages; heads homogamous, discoid, with flowers all hermaphroditic, not yellow; corollas with 5(4) relatively short broad apical lobes; mature achenes black **Eupatorieae** (p. 284)
- 2b Style arms, heads, corollas and mature achenes not showing the above combination of character states 3
- 3a Involucral bracts uniseriate, cohering by their overlapping margins, or partly or wholly connate, with or without a calyculus; pappus present 4
- 3b Involucral bracts imbricate, in 2 or more series, free or connate, if uniseriate then not cohering or pappus absent or heads unisexual or achenes densely villous with long hairs from base 5
- 4a Involucral bracts with evident elongated oil glands; achenes black when mature **Heliantheae sens. lat.** (p. 285)
- 4b Involucral bracts without elongated oil glands; achenes not black when mature **Senecioneae** (p. 288)
- 5a Style arms long, gradually attenuate acute, shortly hairy on outside, style shaft similarly hairy on upper part; heads homogamous, all flowers hermaphroditic **Vernonieae** (p. 289)
- 5b Styles and heads not exhibiting the above combination of character states, or heads unisexual 6
- 6a Heads with all or only outer flowers bilabiate, corollas with 3-toothed outer lips and 2-lobed inner lips **Mutisieae** (p. 288)
- 6b Heads without any such bilabiate flowers 7
- 7a Heads homogamous and discoid, involucral bracts without scarious unlobed appendages or apices, and without scarious margins; or heads heterogamous and radiant with outer flowers $\pm$ enlarged and sterile; or heads unisexual and plants dioecious; involucral bract appendages if present spiniform and/or pinnately divided 8
- 7b Heads heterogamous and radiate or disciform but not radiant as above; or heads homogamous and involucral bracts with unlobed scarious often white or coloured appendages or apices, or with scarious usually brownish margins, but not with spiniform and/or pinnately divided appendages; or heads unisexual and plants monoecious 12
- 8a Leaves spiny or bristly spiny at least towards base 9
- 8b Leaves not spiny or bristly spiny 10
- 9a Anthers tailed; receptacle densely setose **Cardueae** (p. 284)
- 9b Anthers not tailed; receptacle alveolate with fringed alveolae **Arctoteae** (p. 283)
- 10a Corolla lobes of tubular flowers much longer than broad; leaves alternate; heads of more than 1 flower, not aggregated into glomerules 11
- 10b Corolla lobes $\pm$ as long as broad, or if much longer than broad then leaves opposite; heads sometimes of only 1 flower, or heads aggregated into glomerules 13
- 11a Receptacle densely setose; inner flowers hermaphroditic, the outer sterile **Cardueae** (p. 284)
- 11b Receptacle naked or scaly, not setose; all flowers hermaphroditic or unisexual **Mutisieae** (p. 288)

- 12a Style arms of disc flowers connate in lower part, connate part thicker than style shaft and abruptly marked off from it by ring of short hairs at its base; heads always bisexual **Arctoteae** (p. 283)
- 12b Style arms of disc flowers long to short or absent but connate lower part of style arms if present not as above, or heads unisexual and plants monoecious 13
- 13a Receptacle scaly and leaves opposite, or leaves not opposite and mature achenes black and/or heads glomerulate; or receptacle not scaly and pappus of scales and/or leaves opposite and/or mature achenes black and/or heads unisexual and/or heads glomerulate; pappus not of slender bristles, or if of bristles then bristles plumose **Heliantheae sens. lat.** (p. 285)
- 13b Receptacle not scaly (although sometimes hairy or fimbriate), or scaly and leaves not opposite (although sometimes opposite on upper stem) and achenes not black when mature, or heads not unisexual; heads glomerulate or not; if lower leaves opposite then pappus of slender barbellate bristles, at least in disc flowers, or pappus absent, receptacle naked and heads not glomerulate 14
- 14a Style arms of hermaphroditic or functionally male flowers each with subulate to triangular papillose appendage 15
- 14b Style arms of hermaphroditic or functionally male flowers acute to rounded, or truncate and fringed with short hairs or papillae, or shortly conical at apex with subdistal fringe of hairs, not appendaged; or style undivided 16
- 15a Receptacle alveolate; pappus a deeply and unequally lacinate corona; heads disciform **Heliantheae sens. lat.** (p. 285)
- 15b Receptacle, pappus and heads not showing the above combination of character states **Astereae** (p. 283)
- 16a Involucral bracts with scarious usually brown often erose margins, not appendaged; leaves often pinnatifid; style arms apically truncate and fringed, or style undivided and truncate; pappus absent, or if present then a short lacerate crown or lobed auricle, or leaves pinnatifid and outer pappus of 5 white petaloid scales **Anthemideae** (p. 282)
- 16b Involucral bracts green and herbaceous (though often with hyaline margins), or with scarious membranous often white or coloured appendages or apices, or rarely appendages foliose; leaves never pinnatifid; pappus of hairs or scales present in at least some flowers, or if absent then style arms not truncate and fringed 17
- 17a Pappus absent; fruits large curved or angular or winged achenes, or smooth drupes; heads radiate **Calenduleae** (p. 284)
- 17b Pappus present or absent; fruits small achenes and not as above; heads radiate or disciform 18
- 18a Heads radiate; ray flowers neuter, or if fertile then style arms shortly conical at apex with subdistal fringe of hairs **Mutisieae** (p. 288)
- 18b Heads radiate or disciform; ray flowers if present female; style arms not as above **Inuleae sens. lat.** (p. 286)

Anthemideae

Key after Bremer & Humphries in Bull. Nat. Hist. Museum (Bot.) 23,2: 84–90 (1993).

- 1a Receptacle distinctly paleate, with paleae subtending flowers 2
- 1b Receptacle completely epaleate (though sometimes pilose or hirsute) or heads few-flowered and presence of paleae unclear 9
- 2a Heads radiate; rays present 3
- 2b Heads discoid or disciform; rays absent 8
- 3a Rays yellow, rarely abaxially reddish **Ursinia**
- 3b Rays white or rarely pink to reddish on both sides 4
- 4a Achenes copiously villous **Lasiospermum**
- 4b Achenes glabrous, sometimes glandular or papillose 5
- 5a Involucral bracts in 2 unequal series; 1 outer row of pubescent to glabrescent bracts and 1 inner row of generally densely villous bracts **Eriocephalus**
- 5b Involucral bracts imbricate and subequal, not in 2 unequal series 6
- 6a Shrubs with alternate, linear, closely set leaves; achenes with 10 or more ribs **Eumorphia**
- 6b Herbs with alternate leaves; achenes various 7
- 7a Achenes dorsiventrally flattened, with 2 lateral, $\pm$ distinct ribs **Achillea**
- 7b Achenes oblong, ribbed, tubercled **Anthemis**
- 8a Pappus present, achenes 8–10-ribbed; anthers caudate **Inulanthera**
- 8b Pappus absent **Eriocephalus**
- 9a Heads radiate, rays present 10
- 9b Heads discoid or disciform, rays absent 18
- 10a Rays yellow, rarely partly white or reddish or abaxially reddish 11
- 10b Rays white, rarely pink to reddish, bluish violet or creamy orange, but not yellow 12
- 11a Pappus present, of minute scales **Inezia**
- 11b Pappus absent **Chrysanthemum**
- 12a Pappus present 13
- 12b Pappus absent 14
- 13a Achenes 8–12-ribbed, with dark vallicular secretory canals between the pale ribs (pappus of 2 minute scales in ray flowers, absent in disc flowers) **Leucanthemum**
- 13b Achenes 5-ribbed, vallicular secretory canals absent **Cymbopappus**
- 14a Disc corolla 4-lobed 15
- 14b Disc corolla 5-lobed 16

- 15a Rays not true ray flowers, but outer disc flowers with 1 corolla lobe expanded to a limb, scarcely exceeding the bracts; achenes dorsiventrally flattened and with 2 lateral ribs *Cotula*
- 15b Rays true ray flowers, markedly exceeding the bracts; achenes dorsiventrally flattened, 4-ribbed, marginally winged *Inezia*
- 16a Achenes distinctly ribbed, with dark vallicular secretory canals between the pale ribs (pappus of 2 minute scales in ray flowers, absent in disc flowers) *Leucanthemum*
- 16b Achenes distinctly or faintly ribbed, but vallicular secretory canals absent 17
- 17a Disc corolla tube confluent with the achene; achene ribs with resin canals; leaves serrate *Adenanthellum*
- 17b Disc corolla tube not confluent with the achene; achene ribs without resin canals; leaves entire or few-lobed *Phymaspermum*
- 18a Pappus present *Pentzia*
- 18b Pappus absent 19
- 19a Leaves opposite, shrubs with corymbose heads *Gymnopentzia*
- 19b Leaves alternate 20
- 20a Heads in elongated and panicle, rarely racemiform or spiciform inflorescences, often small and numerous and sometimes pendent *Artemisia*
- 20b Heads solitary or in lax to dense corymbs, small to medium-sized and generally erect 21
- 21a Central flower corolla 5-lobed *Phymaspermum*
- 21b Central flower corolla 4-lobed (rarely 3-lobed in *Cotula*) 22
- 22a Achenes not or only slightly dorsiventrally flattened, without or with 3–5 ribs and no wings *Oncosiphon*
- 22b Achenes dorsiventrally flattened, with 2 lateral $\pm$ distinct ribs or wings 23
- 23a Shrublets or halfshrubs, with corymbose or occasionally solitary heads *Schistosiphium*
- 23b Annual or perennial herbs, with solitary heads, rarely a few together *Cotula*

Arctoteae

Key after Hilliard, *Compositae in Natal*: 529–530 (1977).

- 1a Heads discoid, massed in a cushion covering crown of root and surrounded by rosette of leaves *Platycarpha*
- 1b Heads usually radiate, if discoid, then not massed in a cushion surrounded by leaves 2
- 2a Involucral bracts $\pm$ free, inner ones at least obtuse, scarious at tips and on margins 3
- 2b Involucral bracts connate at base or higher, acute or acuminate, often spine-tipped 5
- 3a Achenes flat and deeply grooved on one face, convex and tubercled on the other, glabrous (except for basal coma on ovary) *Arctotis*
- 3b Achenes turbinate, either woolly or glabrous with basal tuft of hairs; pappus present or absent 4
- 4a Achenes glabrous or pubescent with basal tuft of short or long, upward-pointing hairs *Haplocarpha*
- 4b Achenes densely woolly *Arctotheca*
- 5a Involucral bracts connate at base only, base not cup-shaped *Berkheya*
- 5b Involucral bracts connate for a third to two-thirds of their length, forming cup-shaped basal part 6
- 6a Pappus monomorphic, of slender scales *Gazania*
- 6b Pappus dimorphic, an outer series of broad scales hiding an inner series of much shorter, slender scales *Hirpicium*

Astereae

Key partly after Hilliard, *Compositae in Natal*: 56–57 (1977).

- 1a Pappus of inner flowers wanting or of 2 minute bristles *Dichrocephala*
- 1b Pappus setaceous 2
- 2a Heads distinctly radiate, ray flowers conspicuous and eye-catching 3
- 2b Heads either discoid, or marginal flowers filiform or radiate, but rays small, not exceeding 3 mm 6
- 3a Rays biseriate *Erigeron*
- 3b Rays uniseriate 4
- 4a Pappus uniseriate, achenes with 2-celled hairs but without multicellular glands *Felicia*
- 4b Pappus biseriate, outer much shorter than inner, achenes with 2-celled hairs and, usually, multicellular glands as well 5
- 5a Herbaceous, achenes with hairs and multicellular glands *Aster*
- 5b Shrubby, achenes with hairs but no glands *Felicia (F. filifolia)*
- 6a Heads homogamous, all flowers tubular, hermaphroditic 7
- 6b Heads heterogamous 8

7a	Leaves opposite	<i>Pteronia</i>
7b	Leaves alternate	<i>Chrysocoma</i>
8a	Disc flowers functionally male, ray flowers female, in several rows	<i>Psiadia</i>
8b	Inner flowers tubular, hermaphroditic, outer filiform or with very shortly unilabiate or bilabiate corollas, female	9
9a	Marginal flowers with unilabiate or bilabiate corollas (limb sometimes minute)	10
9b	Corolla of marginal flowers filiform	12
10a	Rays yellow	<i>Nidorella</i>
10b	Rays usually white or pale violet, if yellow, then hidden by pappus bristles	11
11a	Disc flowers scarcely widened at top	<i>Conyza</i>
11b	Disc flowers distinctly widened above	<i>Aster (A. squamatus)</i>
12a	Filiform flowers in many series	<i>Conyza</i>
12b	Filiform flowers in a single series	<i>Nolletia</i>

Calenduleae

Key compiled after descriptions in Bremer, Asteraceae, cladistics and classification (1994).

1a	Fruit a drupe	<i>Chrysanthemoides</i>
1b	Fruit an achene	2
2a	Involucral bracts uniseriate	3
2b	Involucral bracts in 2 or 3 rows or imbricate	4
3a	Ray flowers female, fertile or sterile; disc flowers mostly bisexual and fertile, rarely functionally male; disc achenes (if present) laterally flattened, with thickened margin; ray achenes (if present) triquetrous or subterete, sometimes ellipsoid or subglobose, straight or slightly curved, smooth or tuberculate, or shortly winged, or with numerous wing-like protuberances	<i>Dimorphotheca</i>
3b	Ray flowers female, fertile; disc flowers functionally male; ray achenes straight or somewhat curved, triquetrous, 3-winged or terete, smooth or ribbed or tuberculate or with various processes	<i>Osteospermum</i>
4a	Style of disc flowers deeply bifurcate, with linear lobes, covered with acute hairs to well below point of bifurcation	<i>Garuleum</i>
4b	Style of disc flowers shortly bifid, with apical ring of hairs	5
5a	Achenes of ray flowers straight or somewhat curved, triquetrous, 3-winged or terete, smooth or ribbed or tuberculate or with various processes, with or without apical cavities	<i>Osteospermum</i>
5b	Achenes of ray flowers 3-winged, with an apical fenestrate air chamber	<i>Tripteris</i>

Cardueae

Key after Moore & Frankton, Thistles of Canada (1974) and Hilliard, Compositae in Natal: 576 (1977).

1a	Achenes with a nearly central, horizontal basal attachment scar; pappus of scabrid or plumose hairs connate at base	2
1b	Achenes with an oblique attachment scar; pappus of scales, bristles or lacking	4
2a	Pappus of plumose hairs	<i>Cirsium</i>
2b	Pappus of scabrid hairs	3
3a	Filaments free	<i>Carduus</i>
3b	Filaments connate	<i>Silybum</i>
4a	Pappus of achenes consisting of short scales or bristles or pappus lacking	<i>Centaurea</i>
4b	Achenes crowned with ring of 10 short horny teeth and, within this, a ring of 10 long and 10 short rigid bristles	<i>Cnicus</i>

Eupatorieae

Key partly after Dyer, Gen. 1: 649 (1975) and Hilliard, Compositae in Natal: 47 (1977).

1a	Anthers without apical appendages; pappus of 3–5 viscid-tipped knobs	<i>Adenostemma</i>
1b	Anthers with apical appendages; pappus of bristles or scales	2
2a	Achenes with 7–10 ribs; heads with 4 subequal involucral bracts and 4 flowers per head	<i>Mikania</i>
2b	Achenes with 2–5 ribs; heads with several to many flowers	3

3a	Pappus of fimbriate or lacerate scales, extended into scabrid awns	<i>Ageratum</i>
3b	Pappus of bristles	4
4a	Involucral bracts densely imbricated; heads cylindrical	<i>Chromolaena</i>
4b	Involucral bracts eximbricate to weakly subimbricate, subequal	5
5a	Heads broadly campanulate, with 30–100 flowers per head; achenes with few to many glands	<i>Campuloclinium</i>
5b	Heads with less than 30 flowers; achenes setuliferous and/or glanduliferous	6
6a	Involucral bracts 4–12; pappus bristles persistent	<i>Stomatanthes</i>
6b	Involucral bracts up to 30; pappus bristles easily deciduous	<i>Ageratina</i>

Heliantheae sens. lat.

Key after Wild in Kirkia 6: 1–2 (1967) and Hilliard, Compositae in Natal: 290–291, 324 (1977). The tribe Helenieae is included in this tribe—the main difference between the two is the presence or absence of receptacular paleae.

1a	Paleae present	2
1b	Paleae absent	23
2a	Heads unisexual	3
2b	Heads bisexual	4
3a	Involucral bracts of male heads connate; female heads 1-flowered; achene clasped by female involucre which bears 4–6 spines; leaves pinnatisect or pinnatifid	<i>Ambrosia</i>
3b	Involucral bracts of male heads free; female heads 2-flowered; achene clasped by female involucre bearing many hooked spines; leaves lobed but not pinnately divided	<i>Xanthium</i>
4a	Disc flowers functionally male	5
4b	Disc flowers hermaphrodite or only the innermost functionally male	6
5a	Achenes tightly clasped by one of the inner involucral bracts which develop hooked spines; pappus absent	<i>Acanthospermum</i>
5b	Achenes clasped by an involucral scale and 2 lateral concave receptacular paleae; pappus of 2 recurved awns clasping margin of achene	<i>Parthenium</i>
6a	Receptacular paleae ± flat, not or scarcely clasping achenes	7
6b	Receptacular paleae ± conduplicate and clasping or enfolding achenes	13
7a	Pappus present	8
7b	Pappus absent	12
8a	Pappus of awns, usually with retrorse barbs	9
8b	Pappus of scales, sometimes reduced to 2, which are minute and caducous, or of feathery bristles	10
9a	Ray flowers usually yellow	<i>Bidens</i>
9b	Ray flowers white, pink or dark red	<i>Cosmos</i>
10a	Pappus of feathery bristles	<i>Tridax</i>
10b	Pappus of scales, persistent or caducous	11
11a	Pappus of 2 scales, soon caducous, achenes winged; showy garden escape with large yellow rays	<i>Coreopsis</i>
11b	Pappus of several scales, achenes not winged; weed with very small white rays	<i>Galinsoga</i>
12a	(7) Leaves alternate, pinnatifid, petiolate	<i>Chrysanthellum</i>
12b	Leaves opposite, serrate to subentire, sessile, amplexicaul	<i>Guizotia</i>
13a	(6) Inner involucral bracts embracing fertile ray achenes; involucral bracts spatulate and densely glandular	<i>Sigesbeckia</i>
13b	Inner involucral bracts not embracing outermost achenes; leaves opposite, sometimes alternate above	14
14a	Achenes surmounted by a distinct, often lacerate cupule; additional pappus bristles present or absent	15
14b	Achenes without pappus or with pappus of various kinds but not with a cupule	16
15a	Ray flowers producing mature achenes; ligules minute	<i>Blainvillea</i>
15b	Ray flowers not producing mature achenes (style and stigmas sometimes present)	<i>Aspilia</i>
16a	Ray flowers persistent; annual herb to 0.6 m high; unbranched; leaves narrowly oblong-ovate	<i>Zinnia</i>
16b	Ray flowers not persistent	17
17a	Achenes 4-sided; heads large and showy with orange-red or yellow ligules; apex of peduncles becoming very thick	<i>Tithonia</i>
17b	Achenes ± compressed or if not noticeably compressed, peduncles not swollen above	18
18a	Receptacular paleae obovate, truncate-emarginate and caudate-spinescent at apex; perennial shrub up to 6 m high with white rays	<i>Montanoa</i>
18b	Receptacular paleae not caudate-spinescent	19
19a	Disc flowers deep purple, at least above	<i>Helianthus</i>
19b	Disc flowers not purple	20
20a	Disc flowers white; receptacular paleae very narrow and often setiform	<i>Eclipta</i>
20b	Disc flowers not white, ± yellowish	21
21a	Achenes thick or angular, not compressed, pubescent at apex, not winged or margined	<i>Melanthera</i>
21b	Achenes ± compressed, winged or with hyaline cartilaginous margin	22

22a	Achene with broad irregular margin; ligule 10 mm or more long	<i>Verbesina</i>
22b	Achene with hyaline cartilaginous margin; ray flowers $\pm$ 1,3 mm long or absent	<i>Spilanthes</i>
23a	(1) Perennial herbs with somewhat fleshy roots, indigenous	<i>Hypericophyllum</i>
23b	Annual herbs, introduced weeds or garden escapes	24
24a	Involucral bracts connate for most of their length	<i>Tagetes</i>
24b	Involucral bracts free	25
25a	Involucral bracts numerous, appressed hairy, margins with long bristles	<i>Gaillardia</i>
25b	Involucral bracts few ($\pm$ 3–6), glabrous	26
26a	Leaves simple, opposite; individual heads small, aggregated into secondary heads, terminal and axillary	<i>Flaveria</i>
26b	Leaves pinnate, alternate; individual heads solitary on long peduncles	<i>Schkuhria</i>

Inuleae sens. lat.

Anderberg divides this tribe into three separate ones. A key to these tribes was compiled from his descriptions in Can. J. Bot. 67: 2277–2296 (1989).

1a	Stems without resin ducts; leaves generally entire, with B-hairs (hairs with 1 basal cell and very long terminal cell); involucral bracts with entire or divided sclerenchymatous basal portion; pollen with 2-layered double sexine	<i>Gnaphalieae</i>
1b	Stems with or without resin ducts; leaves dentate, denticulate, serrulate or pinnatifid, rarely entire, with A-hairs (multiseptate hairs with short cells); involucral bracts with undivided sclerenchymatous portion; pollen with 1-layered sexine	2
2a	Female flowers uniseriate, radiate, miniradiate or rarely filiform; style with acute sweeping hairs ending above furcation, rarely with obtuse sweeping hairs (<i>Anisopappus</i>)	<i>Inuleae sens. strict.</i>
2b	Female flowers pluriseriate, filiform or rarely radiate; style with obtuse sweeping hairs	<i>Plucheeae</i>

Gnaphalieae

Key after Anderberg in Opera Bot. 104: 34–40 (1991).

1a	Leaves denticulate, dentate, serrulate, serrate or lobed; involucral bracts cartilaginous or herbaceous, without papery lamina	2
1b	Leaves entire or else involucral bracts with papery lamina	8
2a	Heads heterogamous, radiate	3
2b	Heads homogamous, discoid or heterogamous, disciform	7
3a	Receptacle paleate; pappus of rigid awns	<i>Callilepis</i>
3b	Receptacle epaleate; pappus of barbellate bristles	4
4a	Ray flowers purple; pappus of bristles in several rows	5
4b	Ray flowers yellow or white; pappus of bristles in 1 row with an outer row of scales (N.B. some <i>Printzia</i> species may have yellow or greenish ray flowers but then with pappus of bristles in numerous rows)	6
5a	Leaves broad (more than 10 mm); anthers projecting from corolla at an early stage, preflorally	<i>Printzia</i>
5b	Leaves narrow (less than 10 mm), needle-like; anthers projecting at a later stage, postflorally	<i>Athrixia</i>
6a	Leaves triangular, sharply dentate	<i>Philyrophyllum</i>
6b	Leaves elliptic to rounded, sparsely and bluntly dentate	<i>Pentatrichia</i>
7a	Stem and leaves villose; flowers yellow; pappus of short rigid bristles and short scales	<i>Artémisiopsis</i>
7b	Stem and leaves glabrous or puberulous; flowers white or blue; pappus of 1 plumose capillary bristle only	<i>Denekia</i>
8a	(1) Involucral bracts cartilaginous or herbaceous; heads heterogamous, radiate	9
8b	Involucral bracts with papery lamina or else heads heterogamous, disciform or homogamous, discoid	11
9a	Pappus of triquetrous awns; ray flowers creamy white or blue; disc flowers purplish black	<i>Callilepis</i>
9b	Pappus of capillary bristles; flowers not as above	10
10a	Pappus bristles in several rows; ray flowers not yellow	<i>Athrixia</i>
10b	Pappus of bristles in 1 row; ray flowers yellow	<i>Macowania</i>
11a	Involucral bracts entirely cartilaginous or herbaceous or sometimes with minute papery apical portion	12
11b	Involucral bracts conspicuously papery	13
12a	Heads 1-flowered	<i>Stoebe</i>
12b	Heads with 2 or more flowers	<i>Pterothrix</i>
13a	Flowers purple (or reddish) at least apically or basally	14
13b	Flowers yellow	19
14a	Leaves adaxially concave, often tomentose adaxially only	15
14b	Leaves flat or revolute, not tomentose adaxially only	16

15a	Leaves twisted or straight; heads homogamous; pappus barbellate	Metalsia
15b	Leaves straight; heads heterogamous	Ifloga
16a	Heads heterogamous, disciform with female flowers not outnumbering disc flowers	Tenrhynea
16b	Heads heterogamous, disciform with female flowers outnumbering disc flowers	17
17a	Stereome divided	Lasiopogon
17b	Stereome undivided	18
18a	Achenes with globose hairs; pappus basally connate	Gamochaeta
18b	Achenes with clavate or elongated hairs; pappus free	Gnaphalium
19a	(13) Outer involuclral bracts subtending single female flowers; pappus apically plumose	Ifloga
19b	Outer involuclral bracts not subtending single female flowers; pappus various	20
20a	Female flowers fewer than disc flowers	Helichrysum
20b	Female flowers outnumbering disc flowers	21
21a	Heads with fewer than 20 flowers	Achyrocline
21b	Heads with more than 20 flowers	Pseudognaphalium

Inuleae sens. strict.

Key partly after Anderberg in Pl. Syst. Evol. 176: 85–88 (1991).

1a	Pappus missing or very short, not of capillary bristles	2
1b	Pappus of well developed capillary bristles	6
2a	Receptacle paleate	Anisopappus
2b	Receptacle epaleate	3
3a	Pappus missing, achenes shorter than corolla	Calostephane
3b	Pappus of scales	4
4a	Receptacle clothed with numerous bristles	Geigeria
4b	Receptacle without bristles	5
5a	Achenes ellipsoid or with some indistinct edges; style with obtuse (or exceptionally acute, <i>A. smutsii</i>) sweeping hairs	Anisopappus
5b	Achenes broadly elliptic, with glands alternating with ribs; style with acute sweeping hairs	Calostephane
6a	Pappus of scales and bristles	7
6b	Pappus of bristles only	9
7a	Pappus bristles plumose	Pegolettia
7b	Pappus bristles barbellate	8
8a	Pappus scales forming a short connate cup; heads generally heterogamous radiate	Pulicaria
8b	Pappus scales ± free; heads homogamous; achenes glandular over entire surface	Pegolettia
9a	Heads homogamous, discoid	Inula
9b	Heads heterogamous, radiate or disciform	10
10a	Marginal flowers female, radiate or miniradiate	Inula
10b	Marginal flowers female, filiform	11
11a	Marginal flowers female, in several rows; leaves serrate	Blumea
11b	Marginal flowers female, in 1 row; leaves entire	Pechuel-Loeschea

Plucheeae

Key after Anderberg in Pl. Syst. Evol. 176: 155–157 (1991).

1a	Pappus bristles absent	2
1b	Pappus bristles present	3
2a	Heads in secondary heads	Sphaeranthus
2b	Heads not in secondary heads	Litogyne
3a	Achenes with conspicuous red resin ducts	Doellia
3b	Achenes without resin ducts	4
4a	Pappus bristles with patent teeth	Pluchea
4b	Pappus bristles with adpressed teeth	5
5a	Style with rather pointed sweeping hairs, reaching furcation	Nicolasia nitens
5b	Style with obtuse sweeping hairs, reaching well below furcation	6

6a	Anthers with long, distinct tails	<i>Pseudoconyza</i>
6b	Anthers ecaudate	7
7a	Pappus bristles few	<i>Nicolasia</i>
7b	Pappus bristles numerous	<i>Laggera</i>

Lactuceae

Key after Hilliard, *Compositae in Natal: 596–597* (1977).

1a	Pappus of small scales up to 2 mm long	<i>Cichorium</i>
1b	Pappus of hairs or bristles at least 4 mm long	2
2a	Hairs of pappus feathery or at least inner ones so	3
2b	Hairs of pappus not feathery, at most somewhat barbellate	5
3a	Receptacular paleae present	<i>Hypochaeris</i>
3b	Receptacular paleae absent	4
4a	Plants glabrous at maturity, sometimes floccose when young	<i>Tragopogon</i>
4b	Plants rough-hairy	<i>Picris</i>
5a	Achenes 2.0–3.5 mm long, obconic, truncate above, pappus of comparatively few coarse scabrid bristles	<i>Tolpis</i>
5b	Achenes and pappus not as above	6
6a	Achenes tuberculate in upper part with long slender beak; scapes one-headed, hollow	<i>Taraxacum</i>
6b	Achenes and scapes not as combined above, or plants not scapigerous	7
7a	Pappus dimorphic, of setae and fine down-like hairs intermixed	<i>Sonchus</i>
7b	Pappus of setae only, monomorphic, rarely with an outer ring of very short setae	8
8a	Achenes truncate, without ascending hairs or ascending rough projections on ribs or margins	<i>Launaea</i>
8b	Achenes beaked or at least somewhat attenuate above with ascending hairs or rough projections on ribs or at least on margins	9
9a	Achenes ± compressed and unequal-ribbed, with ascending evident or submicroscopic hairs on ribs or at least margins; involucre mostly cylindrical	<i>Lactuca</i>
9b	Achenes ± terete and equal-ribbed, rough with ascending projections on ribs; involucre usually obconic	<i>Crepis</i>

Mutisieae

Key after Hilliard, *Compositae in Natal: 582* (1977) and Pope in *F.Z. 6,1: 4–5* (1992).

1a	Plants dioecious; shrubs or trees	2
1b	Plants monoecious; suffrutices with annual stems from woody rootstocks or annual herbs	3
2a	Pappus of scabrid bristles	<i>Brachylaena</i>
2b	Pappus wanting	<i>Tarchonanthus</i>
3a	Caulescent branched herbs or shrubs; corolla of disc flowers tubular	<i>Dicoma</i>
3b	Acaulescent scapigerous herbs; corolla of disc flowers bilabiate	<i>Gerbera</i>

Senecioneae

Key partly after Jeffrey in *Kew Bull. 41,4: 874* (1986).

1a	Anther bases with sterile tailed auricles; petioles prehensile, thickened basally	<i>Mikaniopsis</i>
1b	Anther bases without sterile tailed auricles; petioles not prehensile	2
2a	Involucres calyculate, with at least one outer smaller basal bract, or if ecalyculate, then leaves peltate	3
2b	Involucres ecalyculate, completely devoid of outer bracts	7
3a	Ovary wall crystals simple, plate-like or needle-like, or absent	4
3b	Ovary wall crystals compound, drusiform, plants succulent	6
4a	Outer (ray) achenes dorsiventrally compressed	<i>Cineraria</i>
4b	Outer (ray) achenes not compressed or radiate flowers absent	5

- 5a Style arm apices not appendaged, truncate or rounded Senecio
 5b Style arm apices with a very short to elongated appendage of fused papillae Crassocephalum
 6a Style arms unappendaged Solanecio
 6b Style arms appendaged Kleinia
 7a (2) Annual herbs Emilia
 7b Perennial herbs or shrubs 8
 8a Heads distinctly radiate 9
 8b Heads discoid, disciform or with very small rays 10
 9a Perennial herbs with basal rosette of leaves Othonna
 9b Erect perennial herbs or shrubs Euryops
 10a Flowers white or pinkish Lopholaena
 10b Flowers yellow 11
 11a Leaves glabrous, thick, almost succulent Hertia
 11b Leaves hispid Euryops

Vernonieae

Key after Dyer, Gen. 1: 649 (1975) and Hilliard, Compositae in Natal: 24 (1977).

- 1a Pappus wanting, achene crowned with thickened rim Ethulia
 1b Pappus of bristles or scales 2
 2a Pappus biseriate, the inner of bristles, the outer of very narrow, short scales, or bristles similar to inner ones Vernonia
 2b Pappus of few caducous bristles 3
 3a Leaves alternate, minutely pellucid-dotted, pappus bristles shortly hairy Erlangea
 3b Leaves opposite or whorled, leaves not pellucid-dotted; pappus bristles hispid Bothriocline

Acanthospermum Schrank (s. Afr.: 3 spp.)

9130000

Hilliard. 1977. Compositae in Natal: 292–294.

australe (Loefl.) Kuntze*

(= *A. brasilum* Schrank)

Herb with prostrate branches. Leaves and stems usually densely pubescent. Fruits typically 6 or 7 (8 or 9) in a head, $\pm$ 7 mm long, oblong-fusiform, covered in short hooked spines, all much the same size. *Flowers yellowish; August and November to May*. Weed in overgrazed grassland, along roadsides and other waste places. Native to South and Central America. *Codd 6020*.

W S C N E

glabratum (DC.) Wild*

(= *A. australe* auctt., non (Loefl.) Kuntze,
= *A. xanthoides* (Kunth) DC. var. *glabratum* DC.)

Prostrate herb. Leaves and stems glabrous or pubescent. Fruits typically 4 or 5 in a head, $\pm$ 10 mm long, oblong-fusiform, covered in short hooked spines all much the same size. *Flowers yellowish or whitish; October to April*. Weed in overgrazed and other disturbed areas. Native to South America. *Welman 475*.

W S C N E

hispidum DC.*

Erect annual herb, 300–500 mm tall. Leaves and stems hispid. Fruit wedge-shaped in outline, somewhat flattened, the 2 terminal prickles the longest. *Flowers*

yellowish; October to May. A weed of cultivation and roadsides. Native to Brazil. *Zambatis 1479*.

W S C N E

Achillea L. (s. Afr.: 1 sp.)

9332000

Hilliard. 1977. Compositae in Natal: 344–346.

millefolium L. sens. lat.*

(= *A. millefolium* L. subsp. *lanulosa* (Nutt.) Piper)

Perennial herb, up to 500 mm tall, strongly aromatic. Leaves 2 or 3 times pinnate, ultimate segments very narrow. Heads crowded in terminal corymbs. Pappus absent. *Flowers with rays usually white, sometimes rosy, disc white or creamy white; November to December*. Weed of cultivation. Native to North America. *Mohle 146*.

W S C N E

Achyrocline (Less.) DC. (s. Afr.: 1 sp.) 8994010

Hilliard. 1983. F.S.A. 33,7,2: 59–60.

stenoptera (DC.) Hilliard & B.L. Burt

(= *Helichrysum stenopterum* DC.,
= *H. gerrardii* Harv.)

Perennial herb, up to 2 m high. Leaves 120 $\times$ 15 mm, lanceolate or linear-lanceolate, apex very acute to acuminate, base decurrent on stem in long narrow wings,

margins revolute, initially white-felted below. *Flowers yellow; February to September.* Streamside or marsh-side scrub. *Codd 6023.*

W S C N E

Adenanthellum *B. Nord.* (s. Afr.: 1 sp.) 9341050

Nordenstam. 1976. Bot. Notiser 129: 157–160.
Nordenstam. 1979. Bot. Notiser 132: 160.

osmitoides (*Harv.*) *B. Nord.*

(= *Adenanthellum osmitoides* (*Harv.*) *B. Nord.*,
= *Chrysanthemum osmitoides* *Harv.*)

Perennial herb, 0.25–0.60 m high. Leaves lanceolate to narrowly ovate or elliptic-ovate to elliptic, sharply serrate, sessile, pubescent to glabrescent. Heads solitary, terminal on long peduncles. Pappus absent. *Flowers with white or creamy white rays, disc yellow; October to April.* Mountain grassland. *Welman 421.*

W S C N E

Adenostemma *J.R. & G. Forst.*

(s. Afr.: 2 spp.) 8785000

Hilliard. 1977. *Compositae in Natal*: 47–50.
King & Robinson. 1987. *Monographs Syst. Bot.* 22: 60, 478.

caffrum *DC.*

Herb, up to 1 m high. Leaves opposite, gradually narrowed at base into short petiole or almost sessile, margin sharply and irregularly incise-serrate. Corolla (2.5–) 3.0–3.5 mm long, style branches (3–) 4–5 mm long. *Flowers white; November to April.* Damp places along streams in forest or woodland. *Vahrmeyer 1588.*

W S C N E

viscosum *J.R. & G. Forst.*

(= *A. perrotetii* *DC.*)

Herb, up to 1 m high. Leaves opposite, usually narrowed at base into long petiole, margin crenate or shallowly and bluntly serrate. Corolla 1.5(–2.0) mm long, style branches not exceeding 1 mm. *Flowers white; February to July.* Damp places along streams in forest or woodland. *Scheepers 97.*

W S C N E

Ageratina *Spach* (s. Afr.: 3 spp.) 8816030

King & Robinson. 1970. *Phytologia* 19.4: 211–216.
Hilliard. 1977. *Compositae in Natal*: 53.

adenophora (*Spreng.*) *R.M. King & H. Rob.**

(= *Eupatorium adenophorum* *Spreng.*)

Perennial herb, up to 1 m high. Leaves, stems and inflorescence branches densely glandular-hairy. Leaves opposite, ovate to rhomboid. Involucral bracts in 2 or 3 series, subequal. Heads $\pm$ 5 mm long. Achenes glabrous. *Flowers white; September.* A weed of waste places, par-

ticularly partly shaded and damp roadsides. Native to Mexico. *Scheepers 461.*

W S C N E

Ageratum *L.* (s. Afr.: 2 spp.) 8795000

Hilliard 1977. *Compositae in Natal*: 50.

conyzoides *L.**

Annual herb, up to 1 m high. Leaves opposite. Heads 4–5 mm across. Involucral bracts oblong, abruptly acuminate, erose, sparsely if at all hairy on back, hairs eglandular. *Flowers purplish, bluish or white; July to June.* Weed of cultivation, often near water. Native to the West Indies, Mexico, Central and South America. *Stalmans 45.*

W S C N E

houstonianum *Mill.**

(= *A. mexicanum* *Sims*)

Annual herb, up to 1 m high. Leaves opposite. Heads 6–7 mm across. Involucral bracts linear-lanceolate, attenuate, entire, ciliate on back, many of hairs glandular. *Flowers purplish, bluish or white; April to January.* Weed of cultivation. Native to Central and South Mexico. *Germishuizen 3306.*

W S C N E

Ambrosia *L.* (s. Afr.: 3 spp.) 9146000

Hilliard. 1977. *Compositae in Natal*: 295–297.

artemisiifolia *L.**

(= *A. maritima sensu* *Wild*)

Bushy annual herb, up to 2 m high. Ultimate leaf segments on average broader than 2 mm. Female heads several clustered in leaf axils below male heads. *Flowers whitish, cream or yellowish; November to March.* Weed along roadsides, riverbanks and disturbed places. Native to America. *Codd 10385.*

W S C N E

psilostachya *DC.**

Perennial herb, up to 1 m high, with simple stems arising from underground runners. Ultimate leaf segments on average narrower than 2 mm. Female heads solitary or 2 or 3 together in leaf axils below male heads. *Flowers whitish; January to February.* Weed of disturbed places. Native to western America. *Bredenkamp 19.*

W S C N E

Anisopappus *Hook. & Arn.* (s. Afr.:

5 spp.) 9096000

Hutchinson. 1906. *Kew Bull.* 1906: 249.
Moore. 1917. *J. Bot., Lond.* 55: 105–106.

Hutchinson. 1933. Kew Bull. 1933: 425.
Burt. 1979. Notes R. bot. Gdn Edinb. 37,2: 294.

junodii Hutch.

Perennial herb, up to 1,5–2,0 m high. Leaves ovate-deltoïd, cordate to truncate at base, margin coarsely dentate; finely reticulate and tomentellous below. Heads ± 10 mm in diameter, in dense corymbs. Pappus present. *Flowers yellow; May to July and in December.* Scrubland. *Stalmans 574.*

W S C N E

latifolius (S. Moore) B.L. Burt
(= *Anaglypha latifolia* S. Moore)

Herb, up to 300 mm tall. Leaves ovate-cordate, sessile. Heads solitary, pedunculate. Paleae on receptacle absent. Pappus absent. *Flowers yellow; November to January.* Grassland. *Kerfoot 8173.*

W S C N E

smutsii Hutch.

Perennial herb, 1,0–1,5 m high. Leaves narrowly elliptic, base cuneate, margin toothed in upper part only; reticulate and tomentellous beneath. Heads cymose-corymbosely arranged. Pappus present. *Flowers yellow; May to September and December to February.* Grassland among rocks; on hillsides. *Hardy 12a.*

W S C N E

Anthemis L. (s. Afr.: 2 spp.) 9330000

Hilliard. 1977. *Compositae in Natal*: 343–344.

cotula L.*

Annual herb, up to 0,6 m high, foetid. Leaves 1–3 times pinnate, ultimate segments narrowly linear. Heads solitary on long peduncles. Ray flowers usually without styles. Receptacular paleae linear, acute. Achenes ribbed and tubercled. *Flowers with white rays, disc yellow; December to April.* Weed of cultivation and waste places. Native to Europe and Asia. *Codd 6570.*

W S C N E

Arctotheca J.C. Wendl. (s. Afr.: 4 spp.) 9432020

Hilliard. 1977. *Compositae in Natal*: 541–543.

calendula (L.) Levyns

(= *A. calendulaceum* (L.) Lewin,
= *Arctotis calendula* L.)

Perennial herb, creeping, erect or rosulate. Leaves oblong in outline, lyrate-pinnatifid, glabrous or pubescent above, thinly white-felted below. Achenes enveloped in copious pinkish brown silky wool. Pappus of minute delicate pointed scales. *Flowers with rays yellow above, sometimes washed greenish grey below, disc yellow; September.* Weed on disturbed sandy soils, roadsides and waste places. *Speedy 18/5.*

W S C N E

Arctotis L. (s. Afr.: 64 spp.) 9432000

Harvey. 1865. F.C. 3: 458–464.
Lewin. 1922. Feddes Reprium Beih. 11.
Norlindh. 1965. Bot. Notiser 118: 406–411.
Hilliard. 1977. *Compositae in Natal*: 536–537.

arctotoïdes (L.f.) O. Hoffm.

(= *Venidium arctotoïdes* (L.f.) Less.)

Matforming perennial, herb. Leaves lyrate-pinnatifid, white-felted below. Involucral bracts white woolly. Achenes epappose, glabrous. *Flowers with yellow rays, often washed purplish brown below, disc yellow; November to May.* Marshy streambanks, in drainage ditches. *Turner 1193.*

W S C N E

microcephala (DC.) P. Beauv.

(= *Venidium microcephalum* DC.)

Herb, up to 200 mm tall. Leaves lyrate-pinnatifid, albo-tomentose beneath. Pedicels normally shorter than leaves; heads small. Achenes epappose, glabrous. *Flowers yellow; September to October and January to March.* Grassland. *Louw 2019.*

W S C N E

venusta Norl.

(= *A. stoechadifolia* auct. non P.J. Bergius)

Annual herb, 0,1–0,6 m high. Basal leaves elliptic-obovate, obtuse, margins deeply sinuate-dentate to pinatilobate, petiolate; cauline leaves sessile, smaller. Achenes densely pilose, with pappus scales. *Flowers with upper surface of rays white to pale yellow, coppery purple to reddish lilac or violet below, disc dark blue-lilac, mauve-blue, blue-black or purple; September to March and in June.* Grassland, often spreading into disturbed places. *Smith 249.*

W S C N E

Artemisia L. (s. Afr.: 2 spp.) 9358000

Hilliard. 1977. *Compositae in Natal*: 360–361.

afra Jacq. ex Willd.

Shrub, up to 2 m high. Leaves bipinnatipartite, ultimate segments linear, entire or toothed, upper surface glabrous, lower canescent. Heads many in terminal racemose panicles. *Flowers yellow; February to July and in November.* Forest margins and along streams. *Devenish 639.*

W S C N E

Artemisiopsis S. Moore (s. Afr.: 1 sp.) 8973000

Merxmüller. 1967. F.S.W.A. 139: 28.

villosa (O. Hoffm.) Schweick.

(= *Amphidoxa villosa* O. Hoffm.)

Annual herb, 100–300 mm tall. Leaves linear-lanceolate, margins entire or distantly serrate. Heads small, in dense glomerules, enveloped by long woolly hairs.

Flowers yellow; April. Deciduous woodland in deep sand. *Weisser* 3305.

W S C N E

Aspilia *A. Thouars* (s. Afr.: 4 spp.) 9195000

Wild. 1967. *Kirkia* 6: 39–48.

mossambicensis (Oliv.) Wild

(= *Wedelia diversipapposa* S. Moore,

= *W. mossambicensis* Oliv.)

Perennial herb, up to 1 m high. Leaves narrowly ovate to ovate to ovate-lanceolate; densely scaberrulous to patently hispid-pilose. Involucral bracts from linear to ovate, ± acute; heads mostly in 3-headed corymbs, these in turn often corymbosely arranged. *Flowers orange to yellow; September to May*. Open woodland. *Codd & De Winter* 5007.

W S C N E

pluriseta *Schweinf.* subsp. **pluriseta**

(= *A. brachyphylla* S. Moore,

= *A. vulgaris* N.E. Br.)

Prostrate, trailing or erect perennial herb, up to 1 m high. Involucral bracts narrowly oblong or linear. Heads solitary. Leaves ovate, acute, sessile. *Flowers yellow; October to June*. Open woodland or grassland. *Stalmans* 290.

W S C N E

Aster *L.* (s. Afr.: 16 spp.) 8900000

Lippert. 1973. *Mitt. bot. StSamml., Münch.* 11: 153–258.

Hilliard. 1977. *Compositae in Natal*: 59–67.

bakeranus *Burtt Davy ex C.A. Sm.*

(= *Aster asper* Wood & Evans,

= *A. hispidus* (Thunb.) Baker)

Perennial herb, up to 450 mm tall. Stems and leaves scabrous. Heads 15–25 mm across. Involucral bracts hairy. *Flowers blue, mauve or less commonly white, disc yellow; August to January*. Open grassland. *Codd* 4717.

W S C N E

comptonii *Lippert*

Scabrid herb, 0,50–1,25 m high. Leaves lanceolate, weakly dentate, margin thickly ciliate. Heads 15–25 mm in diameter. Involucral bracts glabrous. Ray flowers 10–15 mm long, conspicuously exceeding involucral bracts. *Flowers white; October to February*. Mountain grassland. *Codd* 8139.

W S C N E

harveyanus *Kuntze*

(= *Diplopappus serrulatus* Harv.,

= *Felicia serrulata* (Harv.) Burtt Davy)

Perennial herb, up to 0,65 m high. Stems and leaves glabrous, margins scabrid. Heads 13–20 mm across. Involucral bracts glabrous. *Flowers mauve or white,*

disc yellow; May to February. In grassland, often among rock outcrops. *Joffe* 146.

W S C N E

lydenburgensis *Lippert*

Perennial herb, up to 0,65 m high. Stems and leaves scabrid. Involucral bracts glabrous. *Flowers mauve or white, disc yellow; July to June*. Grassland on hills and among rock outcrops. *Obermeyer & Verdoorn* 33.

W S C N E

nubimontis *Lippert*

Herb, 250–300 mm tall. Leaves and lower third of stem hairy, leaves only on lower third of stem. Involucral bracts glabrous. *Flowers white; November*. Mountains. *Van Vuuren* 1303.

W S C N E

peglerae *Bolus*

Herb, 0,4–1,0 m high. Leaves scabrid, ovate to narrowly elliptic, strongly dentate. Involucral bracts glabrous. Ray flowers 5–9 mm long, slightly exceeding involucral bracts. *Flowers white; September to January and in June*. Grassland on mountainsides. *Codd* 4810.

W S C N E

squamatus (Spreng.) Hieron.*

(= *Conyza squamata* Spreng.)

Glabrous annual herb, up to 2 m high. Heads up to 5 mm across, many in compound panicles. *Flowers whitish or very pale mauve; December to June*. Damp places. Native to North America. *Codd* 2656.

W S C N E

Athrixia *Ker Gawl.* (s. Afr.: 10 spp.) 9055000

Hilliard. 1977. *Compositae in Natal*: 266–273.

Kroner. 1980. *Mitt. bot. StSamml., Münch.* 16: 46–101.

arachnoidea *J.M. Wood & M.S. Evans ex J.M. Wood*

Perennial herb, up to 350 mm tall. Stem leaves patent, smooth above or with stalked glands on margins and towards tips, white-felted below. Heads terminal, solitary or occasionally subcorymbose. Pappus of bristles only. *Flowers with mauve rays and yellow disc; August to October*. Steep grass slopes. *Codd* 1653.

W S C N E

elata *Sond.*

Subshrub, up to 1 m high, with many axillary buds. Leaves narrowly ovate-lanceolate or linear, acute to narrowly linear, acute, upper surface glabrous, lower white-felted, margin revolute. Heads in a spike or panicle on side branches, or sessile in leaf axils. Glandular hairs absent or on leaf margins only. Pappus of bristles and scales. *Flowers with pale to dark purple rays, disc yellow; March to December*. Grassland and among rocks. *Acocks* 23471.

W S C N E

fontana MacOwan(= *A. drakensbergensis* Thell.)

Perennial herb, 200–400 mm tall. Basal leaves crowded in a rosette, decreasing in size upwards, upper surface glabrous to villous with long gland-tipped hairs, lower white-felted. Heads solitary, terminal. Pappus of long scabrid bristles alternating with short lacerate scales. *Flowers with rays white often lightly or heavily suffused pink, disc yellow; November and February.* In marshes, along streams, on moist grassy slopes. *Devenish 1071.*

W S C N E

gerrardii Harv.

Perennial herb, up to 0,6 m high. Stem leaves linear, glandular-hispid above, white-felted below. Heads solitary, terminal. Involucral bracts with long bristle points. Pappus biseriate, inner of scabrid bristles, outer of short fimbriate scales. *Flowers with rays magenta-pink, possibly sometimes blue, disc yellow; January to March.* Short stony grassland or eroded patches. *Devenish 1451.*

W S C N E

phylicoides DC.

Shrub, up to 1 m high. Leaves lanceolate or linear-lanceolate, smooth and glabrous above, white-tomentose below. Pappus of bristles alternating with minute scales. *Flowers with mauve rays and yellow disc; December to September.* Grassland or forest margin scrub. *Stalmans 49.*

W S C N E

Berkheya Ehrh. (s. Afr.: 72 spp.) 9438000

Roessler. 1959. Mitt. bot. StSamml., Münch. 3: 104–266.

Roessler. 1960. Mitt. bot. StSamml., Münch. 3: 519–520.

Hilliard. 1977. Compositae in Natal: 547–574.

bipinnatifida (Harv.) Roessler subsp. **bipinnatifida**(= *Stobaea bipinnatifida* Harv.,= *S. seminivea* DC.)

Perennial herb, 0,5–2,0 m high. Stems not winged. Leaves pinnatifid, tomentose below. Heads discoid. Marginal spines of involucral bracts not paired. Pappus scales 0,2–0,6 mm long, apices denticulate. *Flowers white, anthers bluish; January.* Forest margins, becoming a weed along roadsides through or near forest. *Breyer 22722.*

W S C N E

bipinnatifida (Harv.) Roessler subsp. **echinopsoides**

(Baker) Roessler

(= *B. echinopsoides* Baker)

Perennial herb, 0,5–2,0 m high. Stems, leaves and heads as in subsp. *bipinnatifida*. Pappus scales (0,4–) 0,7–1,5 mm long, margins and apices fimbriate. Marginal spines of involucral bracts mostly paired. *Flowers white; January to May.* Forest margins and in open woodland, sometimes becoming a weed. *Buitendag 1214.*

W S C N E

carlinopsis Welw. ex O. Hoffm. subsp. **magalismontana** (Bolus) Roessler(= *B. magalismontana* Bolus)

Perennial herb, 0,5–1,5 m high. Stems not winged, white tomentose. Leaves sessile, cauline, coarsely spinose-dentate, sometimes entire, white tomentose below. Heads radiate, outer involucral bracts white tomentose. *Flowers yellow; November to July.* Mountainsides. *Codd 1053.*

W S C N E

coddii Roessler

Perennial herb, 1,5 m high. Stems not winged. Leaves sessile, glabrous, margins ciliate-dentate. Heads radiate, involucral bracts with marginal spines. *Flowers yellow; November to March.* Grassland. *Muller 2342.*

W S C N E

densifolia Bohnen ex Roessler

Perennial herb, 300–350 mm tall. Stems not winged, densely foliate. Leaves sessile, rigid, linear, 10–30 × 1–2 mm, albo-tomentose below, margin revolute, entire margin beset with stiff bristles. Heads radiate. *Flowers yellow; January to April.* Grassland on hillsides. *Stalmans 452.*

W S C N E

echinacea (Harv.) O. Hoffm. ex Burt Davy subsp. **echinacea**(= *Stobaea echinacea* Harv.,= *S. gerrardii* Harv.)

Perennial herb, up to 1 m high. Stems winged. Upper leaf surface with straw-coloured bristles or spines. Heads radiate, solitary or a few corymbosely arranged. *Flowers yellow; November to April.* Poor stony grassland. *Vorster 2804.*

W S C N E

insignis (Harv.) Thell.(= *Stobaea insignis* Harv.)

Perennial herb, up to 500 mm tall. Stems not winged. Leaves cauline, linear or linear-lanceolate, entire margin with long flexible bristles. Heads radiate. *Flowers bright golden yellow or orange-yellow; July to April.* Rocky grassy hillsides. *Stalmans 200A.*

W S C N E

latifolia J.M. Wood & M.S. Evans

Perennial herb, up to 0,6 m high. Stems winged. Leaves mostly radical, margins sinuate-lobate, lobes rounded, margins beset with short spines, white-felted below. Heads radiate, outer involucral bracts narrowly lanceolate, up to 3 mm broad. Achenes glabrous. *Flowers yellow; October to April.* Grassland or shrubby woodland. *Kluge 2189.*

W S C N E

mackenii (Harv.) Roessler(= *Stobaea mackenii* Harv.)

Shrub, up to 1 m high. Stems narrowly winged. Leaves rigid, lanceolate, acuminate, spine-tipped, all but the

uppermost with 1 or 2 pairs of narrowly triangular, spine-tipped lobes in lower half, sessile, lower surface white-felted. Heads discoid, rarely radiate. *Flowers yellow; March.* Grassland and invading overgrazed grassland. *Hilliard & Burt 14393.*

W S C N E

nivea N.E. Br.

Perennial herb, 0.4–0.8 m high. Stems not winged, albo-tomentose. Leaves shortly petiolate, lanceolate, (10–)15–30 mm broad, mucronate, margins subrevolute, beset with short bristles, lower surface albotomentose. Heads radiate, solitary. *Flowers yellow; November to December.* Hillsides. *Pott 16633.*

W S C N E

onopordifolia (DC.) O. Hoffm. ex Burt Davy var. **onopordifolia**

(= *Stobaea onopordifolia* DC.)

Perennial herb, up to 1 m high. Stems winged. Leaves pinnatifid, margins with coarse triangular, spine-tipped teeth, interspersed with shorter and more slender spines, white-felted below. Heads radiate, outer involucre bracts foliaceous, 5–10 mm broad; spines tipping involucre bracts 3–4 mm long. *Flowers with yellow or white rays, disc yellow; July and November to April.* Grassland. *Arnold 223.*

W S C N E

pauciflora Roessler

Subshrub, up to 1 m high. Stems winged. Leaves sessile, oblong-ovate, lobed, lobes triangular, densely ciliate, not or weakly spiny, glandular. Involucral bracts broad, foliaceous. Heads radiate, few-flowered. *Flowers yellow; January to April.* Hillsides. *Mauve 4792.*

W S C N E

pinnatifida (Thunb.) Thell. subsp. **pinnatifida**

(= *Stobaea epitrachys* DC.,
= *S. pinnatifida* Thunb.)

Perennial herb or subshrub, up to 500 mm tall. Stems not winged. Leaves pinnatilobate, lobes triangular, 5–10(–15) mm long, upper leaf surface beset with straw-coloured bristles. Involucral bracts (2–)3–5 mm broad. Heads discoid. *Flowers yellow; March and July.* Grassland in sandy soil. *Sutton 147.*

W S C N E

pinnatifida (Thunb.) Thell. subsp. **ingrata** (Bolus) Roessler

(= *B. ingrata* Bolus)

Perennial herb or subshrub, 300–500 mm tall. Stems not winged. Leaves pinnatifid, lobes 10–30 mm long, 2 mm broad. Involucral bracts (10–)15–25 mm long, 1–2 mm broad. Heads discoid. *Flowers yellow; December to April.* Grassland, often vleis or marshy areas. *Gernishuizen 3942.*

W S C N E

pinnatifida (Thunb.) Thell. subsp. **stobaeoides** (Harv.)

Roessler

(= *B. stobaeoides* Harv.)

Perennial herb or subshrub, 300–500 mm tall. Stems not winged. Leaves pinnatifid, lobes 10–30 mm long, upper leaf surface as in subsp. *pinnatifida*. Involucral bracts 1–2 mm broad, 10–15 mm long. Heads discoid. *Flowers yellow; January to March.* Grassland, often vleis or marshy areas. *Louw 642.*

W S C N E

radula (Harv.) De Wild.

(= *Stobaea radula* Harv.)

Perennial herb, (0.20–)0.25–0.90 m high. Stems winged. Leaves in a basal rosette, obovate-oblong to elliptic-oblong, margins repand-sinuate to sinuate-lobate, densely ciliate, albotomentose; cauline leaves smaller. Heads radiate. *Flowers yellow; September to May.* Grassland in marshy areas and riverbanks. *Codd 2132.*

W S C N E

radyeri Roessler

Perennial herb, up to 400 mm tall. Stems not winged. Basal leaves oblong-obovate, pinnatilobate, lobes with spines, apex rounded, petiolate; cauline leaves sessile, semi-amplexicaul, spinose-ciliate, apex acute. Heads radiate, solitary. *Flowers yellow; January and April.* In grass among rocks. *Codd & Dyer 9026.*

W S C N E

rhapontica (DC.) Hutch. & Burt Davy subsp. **rhapontica**

(= *Stobaea rhapontica* DC.)

Perennial herb, up to 1.2 m high. Stems winged. Basal leaves crowded in a rosette, obovate-oblong to ovate, margins entire or sinuate-lobate to coarsely toothed, spiny, white-felted below. Heads radiate. Achenes vilous. *Flowers bright yellow; January and April.* Grassland, sometimes among outcropping rocks. *Devenish 468.*

W S C N E

robusta Bohnen ex Roessler

Perennial herb, up to 2 m high. Stems not winged. Leaves mostly cauline, margins sinuate-pinnatilobate or pinnatifid, lower surface grey- or white-felted, sometimes merely glandular-pubescent. Heads radiate. Involucral bracts 5–7 mm broad. *Flowers yellow; February to March.* Grassland or open shrubland. *Hemm 543.*

W S C N E

seminivea Harv. & Sond.

(= *Crocodilodes harveyanum* Kuntze)

Perennial herb, 0.3–0.7 m high. Stems not winged. Leaves sessile, semi-amplexicaul, rigid, lanceolate-oblong to ovate-oblong, apex acute, margin densely spinose-ciliate, lower surface white tomentose. Heads radiate. *Flowers yellow; October to May.* Grassland on hillsides. *Codd & De Winter 3235.*

W S C N E

setifera DC.(= *Crocodilodes setiferum* (DC.) Kuntze)

Perennial herb, up to 1,2 m high. Stems not winged. Leaves radical, obovate to lanceolate-obovate, upper surface with straw-coloured bristles. Heads radiate. *Flowers bright golden yellow; September to February and in May.* Open grassland. Turner 838.

W S C N E

speciosa (DC.) O. Hoffm. subsp. lanceolata Roessler

Perennial herb, up to 1 m high. Stems not winged. Leaves mostly radical, broadly lanceolate, distinctly petiolate, upper surface harshly pubescent, lower white-felted, margins ciliate, cilia up to 2 mm long. Heads radiate, usually in corymbs. *Flowers bright yellow; November to March.* Grassland. *Germishuizen 3883.*

W S C N E

subulata Harv. var. subulata(= *Crocodilodes subulatum* (Harv.) Kuntze)

Perennial herb, up to 0,6 m high. Stems not winged. Leaves cauline, rigid with short stiff marginal spines. Heads radiate, usually solitary, up to $\pm$ 80 mm in diameter. Pappus scales 4–6 mm long, lanceolate, acute. *Flowers golden yellow; June to December.* Grassland, often among rock outcrops. *Kluge 1897.*

W S C N E

subulata Harv. var. wilmsiana Roessler

Perennial herb, up to 0,6 m high. Stems, leaves and heads as in var. *subulata* but heads several, smaller, arranged corymbosely and pappus scales 1,5–2,0 mm long, obovate-oblong. *Flowers golden yellow.* Grassland. No material in PRE.

W S C N E

zeyheri (Sond. & Harv.) Oliv. & Hiern subsp. zeyheri(= *B. subteritifolia* Thell., = *Stobaea zeyheri* Sond. & Harv.)

Perennial herb, 0,2–0,7 m high. Stems not winged. Leaves cauline, linear, 1–2(–4) mm broad, flexible bristles only in lower half of leaf. Heads radiate. *Flowers with white to yellow rays, disc yellow; June to February.* Grassland. *Germishuizen 899.*

W S C N E

zeyheri (Sond. & Harv.) Oliv. & Hiern subsp. rehmannii (Thell.) Roessler var. rehmannii(= *B. rehmannii* Thell.)

Perennial herb, 0,2–0,7 m high. Stems not winged. Leaves cauline, linear-lanceolate, 4–8(–15) mm broad, flexible bristles only in lower half of leaf. Heads radiate, 40–60 mm in diameter. *Flowers with white to yellow rays, disc yellow; August to May.* Rocky, grassy hillsides. *Acocks 13166.*

W S C N E

zeyheri (Sond. & Harv.) Oliv. & Hiern subsp. rehmannii (Thell.) Roessler var. rogersiana (Thell.) Roessler
(= *B. rehmannii* Thell. var. *rogersiana* Thell.)

Perennial herb, 0,2–0,7 m high. Stems not winged. Leaves cauline, linear-lanceolate, 4–8(–15) mm broad, flexible bristles only in lower half of leaf. Heads radiate, 60–80 mm in diameter. *Flowers yellow; August to April.* Mountain grassland. *Codd 5755.*

W S C N E

Bidens L. (s. Afr.: 5 spp.)

9237000

Wild. 1967. *Kirkia* 6,1: 13–34.Hilliard. 1977. *Compositae in Natal*: 316–320.Mesfin Tadesse. 1993. *Kew Bull.* 48: 437–516.**bipinnata L.***

Annual herb, up to 1,5 m high. Leaves bipinnate, leaflets lanceolate in outline, usually lobulate. Pappus awns (2–)3–4. *Flowers yellow; December to May.* Weed of cultivation. Native to America. *Mogg 36320.*

W S C N E

biternata (Lour.) Merr. & Sherff*(= *Coreopsis biternata* Lour.)

Annual herb, up to 1,5 m high. Leaves once pinnate with (3–)5–9 narrowly ovate to ovate leaflets, basal pair $\pm$ deeply divided into 2 asymmetric lobes. Pappus awns 3 or 4(5). *Flowers yellow; February to May.* Weed of cultivation. Native to China. *Van Wyk 3799.*

W S C N E

kirkii (Oliv. & Hiern) Sherff(= *B. schlechteri* Sherff, = *Coreopsis kirkii* Oliv. & Hiern)

Perennial herb, up to 1 m high. Leaves deeply pinnately 3–7-lobed, lobes simple or 3-partite, linear, glabrous. Aristae 2, nude. Achenes linear-oblong, not winged. *Flowers yellow; February to May.* Woodland or submontane grassland. *Steyn 220.*

W S C N E

pilosa L.*(= *B. leucantha* (L.) Willd.)

Annual herb, up to 1,5 m high. Leaves trifoliate or pinnately 5-foliate, leaflets narrowly ovate to ovate-oblong, margins crenate-serrate. Pappus awns 2 or 3. *Flowers with rays creamy white or absent, disc yellow; August to April.* Weed of cultivation. Native to America. *Behr 812.*

W S C N E

schimperii Sch. Bip. ex Walp.(= *B. proluxa* S. Moore)

Annual herb, up to 1,5 m high. Leaves deeply twice or thrice pinnatisect, lobes oblong to ovate, glandular punctulate, margins entire or toothed, ciliate. Pappus awns 2. *Flowers yellow; March to April.* Woodland, savanna woodland or savanna grassland. *Van Wyk 3961.*

W S C N E

Blainvillea Cass. (s. Afr.: 1 sp.) 9190000Wild. 1967. *Kirkia* 6: 38–39.**gayana** Cass.(= *Wedelia gossweileri* S. Moore)

Annual herb, up to 1,5 m high. Leaves elliptic to ovate, tapering to an acute apex, margin serrate-crenate, sparsely pilose, 3-nerved from base. Heads elongate-campanulate on long peduncles. *Flowers whitish or yellow; January to March.* Often a weed of cultivation. *Fourie* 2577.

W S C N E

Blumea DC. (s. Afr.: 1 sp.) 8939000Wild. 1969. *Kirkia* 7,1: 125–132.Anderberg. 1991. *Pl. Syst. Evol.* 176: 105–106.**mollis** (D. Don) Merr.(= *B. lacera* sensu Harv.,= *Erigeron molle* D. Don)

Annual herb, up to 0,6 m high. Stems not winged. Lower leaves sessile or petiolate, cauline leaves sessile, leaf bases cuneate, margins serrate. Peduncles straight, heads held erect. Heads in dense narrow terminal panicles. *Flowers purple; July to March.* Usually near rivers, or a weed of cultivation. *Scheepers* 708.

W S C N E

Bothriocline Oliv. ex Benth. (s. Afr.: 1 sp.) 8746000Wild. 1977. *Kirkia* 10,2: 318.**laxa** N.E. Br. subsp. *laxa*(= *Erlangea laxa* (N.E. Br.) S. Moore)

Annual herb, up to 1 m high. Leaves elliptic, up to 110 × 50 mm. Heads campanulate 4–6 × ± 4 mm. Involucral bracts acuminate. Achene 4-sided with 2 furrows down each side. *Flowers pink to mauve; November and February to May.* Disturbed places. *Scheepers* 274.

W S C N E

Brachylaena R. Br. (s. Afr.: 9 spp.) 8936000Phillips & Schweickerdt. 1937. *Bothalia* 3: 205–221.Paiva. 1972. *Bolm Soc. broteriana* 46, Ser. 2: 368–381.Hilliard. 1977. *Compositae in Natal*: 105–110.Pope. 1992. *F.Z.* 6,1: 5–8.Cilliers. 1993. *Bothalia* 23: 175–184.**huilensis** O. Hoffm.(= *B. hutchinsii* Hutch.)

Tree, 5–9 m high. Leaves grey- or white-felted below, oblanceolate to oblong-elliptic, side veins visible, mucronate, crowded at tips of twigs. Involucral bracts 3- or 4-seriate, densely albo-tomentose, not extending down peduncle. *Flowers cream-white; June and September to November.* In woodland, gully and kloof forests; rocky granitic or quartzite outcrops.

Codd & Dyer 4611 (female), *Lang sub Tvl Mus.* 32343 (male).

W S C N E

ilicifolia (Lam.) E. Phillips & Schweick.(= *Baccharis ilicifolia* Lam.,= *B. racemosa* (Thunb.) Less.)

Shrub or small tree, up to 3,6 m high. Leaves grey- or white-felted below, oblong to oblong-lanceolate, mucronate, side veins indistinct. Involucral bracts 5–8-seriate, bracts never white tomentose. *Flowers white, cream or pale yellow; September to December.* In scrub in dry river valleys and on dry hillsides. *Van Wyk* 5246 (male).

W S C N E

rotundata S. Moore(= *B. rhodesiana* S. Moore)

Tree or shrub, up to 10 m high. Leaves white or greyish tomentose beneath, broadly elliptic, not mucronate, side veins prominent; petiole 2–5(–7) mm long. Heads apparently sessile. Involucral bracts of female heads 6- or 7-seriate; bracts extending down to base of peduncle. Style not swollen at base. *Flowers creamy white and honey; July to December.* Open woodlands, especially on rocky slopes at base of hills, on sandy soil and sandy pits and edge of riverine strips. *Louw* 1765 (female), *De Winter* 8371 (male).

W S C N E

transvaalensis E. Phillips & Schweick.(= *B. discolor* DC. subsp. *transvaalensis* (E. Phillips & Schweick.) Paiva)

Tree, 6–30 m high. Leaves grey or white-felted below, lanceolate, elliptic-lanceolate or obovate-lanceolate, apex acute and acuminate, lateral nerves prominent. Heads sessile or subsessile, small (3–4 × 2–4 mm). Involucral bracts extending down to base of peduncle, bracts 4- or 5(6)-seriate. *Flowers creamy white; July to February.* In forest and wooded kloofs. *Scheepers* 692 (male), *Hafström & Acocks* 1529 (female).

W S C N E

Callilepis DC. (s. Afr.: 5 spp.) 9094000Oliver. 1885. *Hooker's Icon. Pl.*: t. 1482.Burrill Davy. 1936. *Kew Bull.*: 84.Leins. 1971. *Mitt. bot. StSamml., Münch.* 9: 108.Hilliard. 1977. *Compositae in Natal*: 286–288.**caerulea** (Hutch.) Leins(= *Zoutpansbergia caerulea* Hutch.)

Small tree or shrub, 1,5–3,0 m high. Leaves narrowly obovate, serrate in upper half. Heads terminal, solitary. *Flowers with white or blue rays, disc white or purplish; April to July and October to December.* Mountainsides. *Codd* 8757.

W S C N E

lancifolia Burrill Davy

Perennial herb, up to 300 mm tall. Leaves oblanceolate, acute, subsessile. *Flowers with creamy white rays and*

purplish black disc; August to November. Grassland. Pott 15062.

W S C N E

laureola DC.

(= *C. glabra* DC.,
= *C. hispida* DC.)

Perennial herb, up to 0,6 m high. Leaves linear-lanceolate to lanceolate, 3-nerved. *Flowers with creamy white rays and purplish black disc; June to February.* Grassland. Welman 310.

W S C N E

leptophylla Harv.

Perennial herb, up to ± 0,6 m high. Leaves linear-subulate, 1-nerved. *Flowers with creamy white rays and purplish black disc; August to January and in May.* Open grassland. Onderstall 1278.

W S C N E

salicifolia Oliv.

Herb, up to 0,6 m high. Leaves linear, 1-nerved, remotely serrulate, attenuate. *Flowers with creamy white rays and purplish black disc; September to January.* Grassland. Strey 2807.

W S C N E

Calostephane Benth. (s. Afr.: 2 spp.) 9069000

Merxmüller. 1967. F.S.W.A. 139: 37.

Hilliard. 1977. Compositae in Natal: 279–280.

divaricata Benth.

(= *C. foliosa* Klatt,
= *C. schinzii* O. Hoffm.)

Herb, up to 1 m high. Stems narrowly winged. Leaves ovate or lanceolate, sparsely hairy, gland-dotted, margins coarsely toothed or subentire. Heads solitary at tips of branches, with ray flowers. Involucral bracts linear. Inner pappus longer than outer, outer of small scales. *Flowers yellow; July to June.* Open shrubland. Codd 4267.

W S C N E

Campuloclinium DC. (s. Afr.: 1 sp.) 8816040

Hilliard 1977. Compositae in Natal: 54.

King & Robinson. 1987. Monographs Syst. Bot. 22: 519.

macrocephalum (Less.) DC.*

(= *Eupatorium macrocephalum* Less.)

Coarsely hispid perennial herb, up to 0,6 m high. Leaves opposite or subopposite, upper leaves smaller, alternate. Heads ± 15 mm long. Involucral bracts in ± 2 or 3 series, subequal. *Flowers pink; December to March.* Garden escape. Native to Argentina and Brazil. Stalmans 384.

W S C N E

Carduus L. (s. Afr.: 2 spp.)

9461000

Hilliard. 1977. Compositae in Natal: 577.

tenuiflorus Curtis*

(= *C. pycnocephalus* auct. non L.)

Annual or biennial herb, up to 1,5 m high. Stems white-cottony, narrowly spinose-winged, wings running up to base of heads. Leaves sinuate-pinnatifid to lyrate-pinnatifid; lobes broad, deeply and irregularly toothed, teeth spinose; cottony below. *Flowers purple, rarely white; January and April to May.* Weed of cultivation and waste places. Native of the Mediterranean region and western Asia. Jenkins 9932.

W S C N E

Centaurea L. (s. Afr.: 5 spp.)

9476000

Moore & Frankton. 1974. Thistles of Canada: 75–95.

cyanus L.*

(= *Cyanus segetum* Hill)

Annual herb, 0,2–1,0 m high. Leaves linear or lanceolate, entire, white woolly below. Heads radiate. Involucral bracts unarmed, margins regularly lacerate. *Flowers blue, purple or white; December.* Weed of cultivation, escaped from cultivation. Native to Europe and Asia. Burt Davy 7307.

W S C N E

melitensis L.*

Annual herb, 200–500 mm tall. Basal leaves narrowly obovate, lobed; stem leaves the same but mostly entire, sometimes weakly toothed, bases decurrent, pubescent to scabridulous. Heads discoid. Involucral bracts tipped with long spine and at its base 2 or 3 pairs of shorter spines. *Flowers bright yellow; September to February.* Weed of cultivation. Native to Mediterranean region. Kings 1809.

W S C N E

repens L.*

Perennial herb, 0,2–0,9 m high. Leaves oblong to linear-lanceolate, entire to irregularly notched; pilose when young, glabrate. Heads discoid. Involucral bracts with margins chartaceous, entire. *Flowers pink or purple; January.* Weed of cultivation. Native to Europe and Asia. Van Wyk 143.

W S C N E

solstitialis L.*

Annual or biennial herb, up to 1 m high. Leaves narrow, linear, entire, grey, woolly, bases decurrent. Heads discoid. Involucral bracts tipped by long spines, bearing 2–4 short lateral spines at base. *Flowers yellow; January.* Weed of cultivation. Native to Europe and Asia. Burt Davy 5641.

W S C N E

Chromolaena DC. (s. Afr.: 1 sp.) 8816020

King & Robinson. 1970. *Phytologia* 20,3: 196–209.
 Hilliard. 1977. *Compositae in Natal*: 52–53.

odorata (L.) R.M. King & H. Rob.*
 (= *Eupatorium odoratum* L.)

Scrambling shrub, up to 4 m high. Involucral bracts in 5 or 6 series, outer much shorter than inner. Leaves opposite. *Flowers whitish or pale mauve; June*. Weed forming thickets in wooded kloofs or on forest margins and along roadsides. Native to Central and tropical South America. *MacDonald 37*.

W S C N E

Chrysanthellum Rich. (s. Afr.: 1 sp.) 9232000

Wild. 1967. *Kirkia* 6: 34–35.
 Turner. 1988. *Phytologia* 64,6: 432–434.

indicum DC.*

Annual herb, up to 300 mm tall. Leaves pinnatifid with segments often lobed, linear or very narrowly obovate apiculate; petiole up to 30 mm long, widened and clasping stem at base. *Flowers with yellow or orange-yellow rays, disc orange; February to March*. In damp situations or a weed of gardens, roadsides, overgrazed grassland, etc. Native to South America. *Van Dam 16516*.

W S C N E

Chrysanthemoides Tourn. ex Medik. (s. Afr.: 2 spp.) 9427020

Norlindh. 1943. *Studies in the Calenduleae*: 367–403.

monilifera (L.) Norl. subsp. canescens (DC.) Norl.
 (= *Osteospermum pisiferum* L. var. *canescens* DC.)

Shrub, 1–3 m high. Branches, involucre and often leaves long retaining their greyish hairy indumentum. Leaves coarsely dentate. Inner involucral bracts narrowly oblong or elliptic, acute or acuminate. Fruit a drupe with ellipsoid or obovoid endocarp. *Flowers pale yellow; September to June*. Mountainous areas. *Devenish 623*.

W S C N E

monilifera (L.) Norl. subsp. septentrionalis Norl.
 (= *Osteospermum moniliferum* L. forma *foliis subintegris* Engl.)

Shrub, 1–3 m high. Branches and involucre long retaining their hairy indumentum. Leaves subentire. Involucral bracts ovate or broadly lanceolate. Fruit a drupe with ellipsoid or obovoid endocarp. *Flowers pale yellow; July to June*. Mountain grassland. *Hemm 290*.

W S C N E

Chrysanthemum L. (s. Afr.: 2 spp.) 9341000

Bailey. 1977. *Hortus Third*: 266–269.
 Hilliard. 1977. *Compositae in Natal*: 348–350.

segetum L.*

Annual herb, up to 0,6 m high. Leaves sessile, oblong to spatulate or ovate in outline, pinnatifid or coarsely toothed. Heads solitary. *Flowers yellow; February*. Escaped from cultivation. Native to Europe and Asia. *Burt Davy s.n. (Col. Herb. 1388)*.

W S C N E

Chrysocoma L. (s. Afr.: 20 spp.) 8930000

Hilliard. 1977. *Compositae in Natal*: 99.
 Bayer. 1981. *Mitt. bot. StSamml., Münch.* 17: 259–392.
 Wijnands. 1985. *Taxon* 34: 311.

ciliata L.

(= *C. tenuifolia* P.J. Bergius,
 = *Aster discoideus* Sond.)

Small shrub, up to 1 m high. Leaves linear, needle-shaped, glabrous, up to 15 mm long, 0,5 mm broad, gland-dotted and often sticky. *Flowers yellow; July to April*. Rocky places. *Venter 244*.

W S C N E

obtusata (Thunb.) E. Bayer

(= *Aster obtusatus* Thunb.,
 = *C. polygalifolia* S. Moore)

Small shrub, up to 500 mm tall. Leaves narrowly oblanceolate, flat, glabrous, gland-dotted, 5–17 mm long and 0,7–2,2 mm broad. *Flowers yellow; September to October and January to March*. Grassland on sandy soil. *Hanekom 1604*.

W S C N E

Cichorium L. (s. Afr.: 1 sp.) 9553000

Hilliard. 1977. *Compositae in Natal*: 597–598.

intybus L.*

Perennial herb, up to 1,2 m high. Basal leaves large, irregularly lobed and toothed; stem leaves smaller, amplexicaul. Heads solitary or in few-headed clusters, sessile in axils of upper leaves. Achenes obscurely 5-angled. Pappus of small scales. *Flowers sky-blue, rarely pink or white; October to March*. Escaped from cultivation, occurring as a weed in disturbed areas. Native to Europe and Asia. *Verdoorn sub PRE 45118*.

W S C N E

Cineraria L. (s. Afr.: 37 spp.) 9406000

Harvey. 1865. *F.C.* 3: 307–314.
 Moore. 1903. *J. Bot., Lond.* 41: 400–401.
 Hutchinson. 1931. *Kew Bull.*: 251.
 Burt Davy. 1936. *Kew Bull.*: 81.
 Hilliard. 1977. *Compositae in Natal*: 372–387.
 Jeffrey. 1986. *Kew Bull.* 41,4: 930–931.
 Cron. 1994. *Jl S. Afr. Bot.* 60,3: 161–167.

albicans N.E. Br.

Perennial herb or shrublet, straggly or decumbent. Leaves reniform or deltoid in outline, persistently cobwebby to white-felted below; petiole amply auricled. Involucral bracts glabrescent except at base. Achenes margined but margins much narrower than body of achene; glabrous or very sparsely ciliate on faces, margins ciliate. *Flowers bright yellow*. Rock outcrops on hillsides and mountainsides. No specimens in PRE.

W S C N E

alchemilloides DC.

Herb, up to 500 mm tall. Leaves cordate-reniform, woolly/canescens below; petioles minutely auricled. Achenes puberulous and ciliate. *Flowers yellow; April to June and October*. Rocky hillsides. *Van Wyk & Theron 4688*.

W S C N E

aspera Thunb.

Annual herb, up to 1 m high. Leaves pinnate or bipinnate, both surfaces hispid, often thinly greyish white woolly or cobwebby as well, particularly when young; petioles auricled. Involucral bracts thinly white woolly, glabrescent. Achenes ciliate on faces and margins. *Flowers bright yellow; December and March to May*. On poor, stony or sandy mountainsides; becoming a weed along roadsides. *Vahrmeijer 1552*.

W S C N E

austrotransvaalensis Cron

Perennial subshrub, up to 1 m high. Leaves (5-)7-lobed, margins conspicuously dentate; upper leaves deltoid-reniform to reniform, usually pinnatifid at base; lower leaves reniform; both sides tomentose. Inflorescence a compound corymb with many heads on relatively short peduncles. Achenes densely ciliate on margins or narrow wings. *Flowers yellow; March to June, October and December*. Among rocks on steep slopes or on hills and ridges as well as at edge of thick bush or under trees. *Behr 486*.

W S C N E

canescens Wendl. ex Link

Perennial herb, up to 1 m high. Leaves mostly reniform, sometimes with additional lobes on petiole, glabrous to canescent or tomentose; petioles auricled. Rays 5-8. Achenes hispidulous, ciliate. *Flowers yellow; January and April to July*. Among rocks on hillsides. *Codd 7918*.

W S C N E

deltoida Sond.

(= *C. monticola* Hutch.)

Possibly perennial herb, up to 1 m high. Leaves deltoid in outline, thinly hairy below, at least on nerves; petioles auricled. Rays 5 (rarely 6). Achenes glabrous. *Flowers bright yellow; June*. Forest margin. *Hutchinson & Gillett 3201* (not in PRE).

W S C N E

geraniifolia DC.

Perennial herb up to 0.6 m high. Stems simple or forking near base. Uppermost leaves lyrate-pinnatifid, apical lobe largest, reniform or deltoid-reniform in outline, glabrous or ciliate mainly on nerves below and on margins of petiolar base; petiolar auricles very small. Rays 8-12. Achenes margined but margins much narrower than body of achene, glabrous. *Flowers bright yellow*. Damp places often in grass along stream-banks. No specimens in PRE.

W S C N E

hederifolia Cron

Procumbent or creeping perennial herb. Leaves deltoid with 5 or 7 triangular, entire lobes, densely tomentose below, glabrescent above. Inflorescence a lax cyme, with 4 heads, on relatively short tomentose peduncles. Achenes with thickened margins, glabrous. *Flowers yellow; November to June*. Among quartzite rock and in mist; crevices along cracks of quartzite rocks in mist belt or near rivers and waterfalls. *Codd 6747*.

W S C N E

lobata L'Hér.

Herb, up to 1 m high. Leaves reniform in outline, glabrous; petioles of upper leaves with small auricles. Achenes hispid, ciliate on margins. *Flowers yellow; February to July and in November*. On rocky hillsides. *Codd 10103*.

W S C N E

longipes S. Moore

Herb. Leaves reniform-cordate, glabrous; petioles auricled. Achenes glabrous. *Pehrsson TM5114*.

W S C N E

lyrata DC.

Annual herb, up to 0.6 m high. Leaves oblong in outline, lyrate-pinnatifid; petioles auricled, glabrescent. Rays 8. Achenes with broad wings $\pm$ equalling body of achene. *Flowers bright yellow; October to May*. Weed along roadsides and in old fields; often wet places. *Welman 463*.

W S C N E

parvifolia Burtt Davy

Perennial herb, up to 1 m high. Leaves lyrate-pinnatifid, glabrous; petioles auricled. Achenes pubescent, ciliate. *Flowers yellow; November to June*. Among rocks on hillsides. *Repton 1009*.

W S C N E

saxifraga DC.

Dwarf shrub. Stems and leaves glabrous. Leaves on long petioles, roundish reniform, truncate or cuneate at base, coarsely 5-9-toothed at apex, many-nerved; petiole not auricled. Heads radiate. Achenes hispidulous.

lous, ciliate, compressed or flattened. *Flowers yellow; December to February.* Mountainsides. *Galpin 11653.*

W S C N E

sp.

Woody herb, 1 m high. Leaves reniform in outline, with additional lobes along petiole, tomentose below; petioles with large auricles. Achenes glabrous. *Flowers yellow; March to December.* Hillsides and on forest margins. *Killick & Strey 2393.*

W S C N E

Cirsium *Mill. emend. Scop.* (s. Afr.:

2 spp.)

9462000

Moore & Frankton. 1974. Thistles of Canada: 19–28.

Hilliard. 1977. Compositae in Natal: 578–579.

arvense (*L.*) *Scop.**

(= *Serratula arvensis* L.)

Perennial herb, 0.3–0.9 m high, sometimes up to 1.5 m. Heads small, discoid; flowers dioecious. Leaves entire to deeply pinnately lobed, margins with long and short spines; sessile, clasping. *Flowers purplish, occasionally white; March.* Weed of cultivation and waste places. Native to Europe and Asia. *Magistrate sn. Govt. Herb. 13869.*

W S C N E

vulgare (*Savi*) *Ten.**

(= *Carduus vulgaris* Savi)

Biennial herb, up to 1.5 m high, monoecious. Heads large; discoid. Upper branches irregularly and spiny winged. Leaves deeply pinnately parted, segments ending in long, stout spine, margins also with shorter, finer spines, upper surface rough, scabrous, lower glabrate to grey tomentose. *Flowers reddish purple, rarely white; December to May.* Weed of cultivation and waste places. Native to Europe, western Asia and North America. *Arnold 202.*

W S C N E

Cnicus *L.* (s. Afr.: 1 sp.)

9479000

Moore & Frankton. 1974. Thistles of Canada: 98–100.

benedictus *L.**

Annual herb, up to 0.9 m high. Stems furrowed, glandular-pubescent; sometimes almost acaulescent. Leaves shallowly pinnatifid to subentire, lanceolate to oblong in outline, with short, fine marginal spines. Heads solitary, discoid. Outer involucre bracts with slender apical spine; inner progressively larger and spine bearing lateral spinules. *Flowers yellow; September to December.* Weed of cultivation. Native to Europe and Asia. *Du Toit sub PRE 45298.*

W S C N E

Conyza *Less.* (s. Afr.: 15 spp.)

8926000

Wild. 1975. *Kirkia* 10,1: 35–62.

Hilliard. 1977. Compositae in Natal: 86–96.

Danin. 1990. *S. Afr. J. Bot.* 56,3: 412–413.

aegyptiaca (*L.*) *Aiton*

(= *C. transvaalensis* Bremek.,

= *Erigeron aegyptiacus* L.)

Annual or biennial herb, up to 1 m high. Leaves mostly cauline, sessile, cut to midrib in at least lower half. Heads $\pm$ 15 mm in diameter. Pappus of long white scabridulous bristles. *Flowers yellow; November to February and in May.* On margins of forests and bush-clumps, often weedy. *Jacobsen 1625.*

W S C N E

albida *Spreng.**

(= *C. floribunda* Kunth,

= *C. sumatrensis* (Retz.) E. Walker)

Annual herb, up to 2 m high. Leaves lanceolate to elliptic, margins entire or toothed. Lateral branches never overtopping main axis, the whole forming a pyramidal compound inflorescence. Heads less than 10 mm in diameter, pappus straw-coloured. *Flowers greenish white, greenish yellow, yellowish or whitish; January to May.* Weed of waste places and cultivated ground. Native to Europe and Mediterranean region. *Codd 9562.*

W S C N E

attenuata *DC.*

(= *C. persicifolia* (Benth.) Oliv. & Hiern,

= *Erigeron persicifolius* Benth.)

Annual or biennial herb, up to 2 m high. Leaves elliptic to lanceolate, acuminate, eared and clasping at base, margins serrate. Heads $\pm$ 5 mm in diameter. *Flowers yellow; May to December.* Moist situations, along stream and riverbanks and submontane woodland or forest edges. *Scheepers 390.*

W S C N E

bonariensis (*L.*) *Cronquist**

(= *Erigeron bonariensis* L.,

= *E. linifolius* Willd.)

Annual herb, up to 1.2 m high. Lateral branches commonly overtopping or at least equalling main axis. Heads more than 10 mm in diameter. Pappus dirty white or pinkish. *Flowers whitish or yellowish green; August to April.* Weed of wasteland or cultivated land. Native South America. *Hanekom 1799.*

W S C N E

canadensis (*L.*) *Cronquist**

(= *Erigeron canadensis* L.)

Herb, up to 1.5 m high. Leaves linear or narrowly lanceolate, margins entire or toothed, ciliate. Lateral branches never overtopping main axis, the whole forming a pyramidal compound inflorescence. Heads $\pm$ 5 mm in diameter. Pappus straw-coloured. *Flowers with white or mauve-tinged rays; October to July.* Weed of wasteland and cultivation. Native to North America. *Codd 9563.*

W S C N E

chilensis Spreng.*

Perennial herb, up to 1 m high. Leaves mostly crowded in a basal rosette, elliptic, margins crenate, crenate-sinuate, sometimes pinnatifid. Heads up to 20 mm in diameter. *Flowers dull yellow or dirty white; November to March.* Garden weed, along roadsides and in disturbed grassland. Native to South America. *Devenish 1079.*

W S C N E

gouanii (L.) Willd.

(= *C. hochstetteri* Sch. Bip. ex A. Rich.,
= *Erigeron gouanii* L.)

Perennial herb, up to 0,6 m high. Basal leaves broadly elliptic, thinly hairy, margins crenate, on a long (–40 mm) petiole; stem leaves diminishing in size upwards and becoming sessile. Heads in compact corymbose clusters. *Flowers yellow; September to December.* Damp, shady situations, favouring pathsides in forest, streambanks and wet roadside ditches. *Scheepers 459.*

W S C N E

obscura DC.

(= *Webbia kraussii* Sch. Bip.)

Herb, up to 0,6 m high. Stems and leaves with copious white pubescence. Leaves pinnatifid or lower ones deeply crenate, lobes oblong, entire, sessile. Heads $\pm$ 10 mm in diameter, in compound, terminal corymbs. *Flowers white to pale yellow; December to March.* Forest margins but tending to spread to disturbed areas. *Codd & De Winter 4935.*

W S C N E

pinnata (L.f.) Kuntze

(= *C. pinnatilobata* DC.,
= *Erigeron pinnatus* L.f.)

Weakly hairy perennial herb, up to 0,6 m high, with long leafy runners. Leaves pinnatifid, lobes oblong, obtuse to broadly acute, commonly 1- or 2-toothed. Heads 10 mm in diameter, in compound, terminal corymbs. *Flowers yellow; October to April.* Damp situations such as hollows in open grassland, streambanks and forest margins and glades. *Elan-Puttick 198.*

W S C N E

podocephala DC.

Perennial herb, up to 500 mm tall. Basal leaves in a rosette, oblong-obovate, margins coarsely crenate in upper half, entire in lower; cauline leaves similar but smaller. Heads $\pm$ 15 mm in diameter, solitary on long nude or nearly nude peduncles. *Flowers yellow; July and October to April.* Along roadsides and in disturbed grassland. *Codd 2205.*

W S C N E

scabrida DC.

(= *Baccharis ivaefolia* L.,
= *C. ivifolia* (L.) Less.)

Shrub, up to 1,2 m high. Leaves elliptic to lanceolate, 3-nerved from base, margins sharply serrate, petiolate. Heads less than 8 mm in diameter, in compact terminal compound corymbs. *Flowers pale yellow; July to June.*

Damp situations, commonly found in sandy streambeds or along streams and forest margins. *Raal 632.*

W S C N E

ulmifolia (Burm. f.) Kuntze

(= *C. incisa* Aiton,
= *Baccharis ulmifolia* Burm. f.)

Herb, up to 1,2 m high. Leaves distinctly petiolate, eared at base, lyrate-pinnatifid, upper part elliptic to ovate in outline, lower lobes sometimes lacking, margins coarsely and irregularly crenate-serrate to lobulate. *Flowers yellow; October to July.* Damp forest margins and straggling through other vegetation along streams. *Codd 2359.*

W S C N E

Coreopsis L. (s. Afr.: 2 spp.)

9227000

Hilliard. 1977. *Compositae in Natal*: 315–316.

lanceolata L.*

Perennial herb, up to 500 mm tall. Basal leaves crowded, oblong to linear, entire, tapering to base and half clasping; on flowering stems: lower pinnatisect, upper entire. Heads solitary on long, nude peduncles. *Flowers bright yellow; October to November.* Escaped from cultivation, along roadsides and in grassland. Native to eastern United States. *Stirton 8000.*

W S C N E

Cosmos Cav. (s. Afr.: 2 spp.)

9238000

Henderson & Anderson. 1966. Common weeds in South Africa: 356–357.

Hilliard. 1977. *Compositae in Natal*: 319.

bipinnatus Cav.*

(= *Bidens formosa* (Bonato) Sch. Bip.,
= *Coreopsis formosa* Bonato)

Annual herb, up to 2,5 m high. Leaves finely dissected. Pappus awns 1–3 or absent. *Flowers with white, pink or crimson rays, disc yellow; December to April.* Escaped from cultivation; in disturbed places, e.g. along roadsides. Native to Central America and the West Indies. *Turner 1657.*

W S C N E

Cotula L. (s. Afr.: 44 spp.)

9351000

Harvey. 1865. *F.C. 3*: 177–186.

Hilliard. 1977. *Compositae in Natal*: 350–357.

Bremer & Humphries. 1993. *Bull. Nat. Hist. Museum (Bot.)* 23,2: 157–159.

anthemoides L.

(= *C. microcephala* DC.)

Annual, erect or spreading herb, up to 200 mm tall. Peduncles not exceeding leaves, glabrous or with

woolly, spreading hairs. Female flowers in 5 or 6 series. Corolla wanting or much reduced in outer, female flowers. *Flowers yellow; July to June*. Damp situations, e.g. muddy streambanks and edges of pans. *Van der Schijff 3143*.

W S C N E

australis (Spreng.) Hook. f.
(= *Anacyclus australis* Spreng.)

Annual, erect or decumbent herb, up to 200 mm tall. Peduncles much exceeding leaves, hairs below heads appressed-ascending. Female flowers in ± 3 series. Corolla wanting or much reduced in outer, female flowers. *Flowers whitish; October, March and June*. Weed in damp and shaded places in gardens. *Repton 1260*.

W S C N E

coronopifolia L.

Ascending or decumbent herb, 300–500 mm tall. Leaves broadly linear or sub lanceolate, irregularly toothed, sheathing at base. Heads solitary; involucre bracts linear, obtuse, with membranous tip. *Flowers bright yellow; April to June*. Wet spots, edges of pans etc.; often in water. *Allan 191*.

W S C N E

hispidia (DC.) Harv.
(= *Tanacetum hispidum* DC.)

Perennial, erect or decumbent herb, up to 400 mm tall. Lower leaves distinctly petiolate, upper sessile; with spreading hairs, bipinnate, lobes linear. Heads solitary. Upper part of peduncle swollen under head. *Flowers bright yellow, reddening with age; November and February to March*. Steep rough grass slopes, along bases of cliffs and around rock outcrops. *Galpin 13634*.

W S C N E

microglossa (DC.) O. Hoffm. & Kuntze ex Kuntze
(= *Cenia microglossa* DC.)

Annual herb, up to 300 mm tall. Leaves bipinnatisect; plants softly and patently villous. Heads terminal, solitary on long peduncles; peduncles below head broadened, hollow—especially conspicuous in fruiting heads. Involucre bracts 1-nerved. *Flowers yellow; September to February*. Riverbanks, edges of vleis or in disturbed grassland. *Codd 2652*.

W S C N E

nigellifolia (DC.) Bremer & Humphries var. **nigellifolia**
(= *Matricaria nigellifolia* DC. var. *nigellifolia*,
= *Sphaeroclinium nigellifolium* (DC.) Sch. Bip.)

Creeping or decumbent annual or perennial herb. Leaves 2 or 3 times pinnate, ultimate segments linear. Heads solitary on long nude peduncles, ± 10 mm in diameter; involucre bracts ± 2 mm broad; rays short and broad. *Flowers with white rays, disc yellow; May to February*. Wet places, riverbanks, etc. *Codd 9983*.

W S C N E

Crassocephalum Moench (s. Afr.):
5 spp.)

9405010

Hilliard. 1977. *Compositae in Natal*: 368–372.
Jeffrey. 1986. *Kew Bull.* 41.4: 904–908.

crepidioides (Benth.) S. Moore
(= *Gynura crepidioides* Benth.)

Annual erect herb, up to 1.2 m high. Leaves entire or with 1 or 2 lobes at base. Peduncles with several to many heads. *Flowers whitish or buff, lobes reddish; March to September*. Forest margins. *Onderstall 825*.

W S C N E

× **picridifolium** (DC.) S. Moore
(= *Senecio picridifolius* DC.)

Perennial herb, up to 1 m high. Leaves narrowly to broadly lanceolate, sessile, margins coarsely toothed. Peduncles with usually 1, occasionally 2 or 3, heads. *Flowers bright golden-yellow; September to June*. In marshy places. *Hemm 619*.

W S C N E

Crepis L. (s. Afr.: 2 spp.)

9605000

Hilliard. 1977. *Compositae in Natal*: 633–634.

hypochaeridea (DC.) Thell.

(= *C. hypochaeridea* (DC.) Thell. var. *genuina* Thell.,
= *C. polyodon* (Fr.) E. Phillips,
= *Hieracium polyodon* Fr.)

Perennial herb, up to 500 mm tall. Leaves mostly radical, oblong to lanceolate, narrowed to base, margins remotely denticulate, irregularly and coarsely toothed or runcinate-pinnatifid. Involucre at least 10 mm long at flowering. Achenes with long beak. *Flowers pale yellow; July to December*. Grassland. *Bredenkamp 840*.

W S C N E

Cymbopappus B. Nord. (s. Afr.:
3 spp.)

9341040

Nordenstam. 1976. *Bot. Notiser* 129: 150–153.
Nordenstam. 1987. *Opera Bot.* 92: 147.

piliferus (Thell.) B. Nord.

(= *Chrysanthemum lasiopodum* Hutch.,
= *Cymbopappus lasiopodus* (Hutch.) B. Nord.)

Perennial herb, up to 400 mm tall. Leaves alternate, pinnatipartite with 2–5 pairs of lobes, lobes filiform-subulate; distinctly gland-dotted. Heads terminal, solitary on long peduncles. *Flowers with white rays, disc yellow; October to November*. Mountain grassland. *Codd 7600*.

W S C N E

Denekia Thunb. (s. Afr.: 1 sp.)

8949000

Hilliard. 1977. *Compositae in Natal*: 117–118.

capensis Thunb.

(= *Amphidoxa glandulosa* Klatt,
= *D. glabrata* DC.)

Perennial herb, up to 0,7 m high. Leaves oblong or linear-oblong, sessile, often auriculate at base, or lower leaves petiolate; usually white-felted below. Heads small, in terminal corymbose clusters. *Flowers white or bluish; July to June*. Damp places, often in shallow water, in marshes or marshy streambanks. *Ellery 167.*

W S C N E

Dichrocephala L'Hér. ex DC. (s. Afr.:

1 sp.)

8866000

Hilliard. 1977. Compositae in Natal: 58–59.

integrifolia (L.f.) Kuntze subsp. **integrifolia**

(= *D. latifolia* (Lam.) DC.)

Erect or ascending herb, up to 1 m high. Leaves alternate, lyrate-pinnatifid, lobes serrate. Inflorescence in lax terminal divaricate panicles. Involucral bracts small, membranous, margins fimbriate. Pappus of 2 delicate bristles, soon caducous. *Flowers whitish; November to June*. Damp, shady places, often on roadsides, weed. *Codd 9417.*

W S C N E

Dicoma Cass. (s. Afr.: 22 spp.)

9501000

Wilson. 1923. Kew Bull. 1923: 377–388.
Smith. 1927. Bothalia 2: 365.
Schweickerdt. 1936. Kew Bull. 1935: 206–207.
Wild. 1972. Kirkia 8,2: 178–192.
Hilliard. 1977. Compositae in Natal: 582–586.
Pope. 1991. Kew Bull. 46,4: 699–709.
Pope. 1992. F.Z. 6,1: 29–44.

anomala Sond.

(= *D. anomala* Sond. subsp. *cirsioioides* (Harv.) Wild)

Prostrate perennial herb. Leaves linear-elliptic to narrowly elliptic, margin entire to serrulate, lower surface white-felted. Heads homogamous, discoid, 15–30 mm long, broadly campanulate, solitary or subcorymbosely arranged at branch tips. Inner involucral bracts with subulate apices, exceeding pappus. Pappus setae barbellate. *Flowers purple or whitish; November to July*. Hillsides, flat grassland or savanna. *Arnold 274.*

W S C N E

arenaria Bremek.

Decumbent to suberect perennial herb, up to 250 mm tall. Leaves discolorous, distinctly more densely greyish lanate on lower surface, upper surface showing green through indumentum, indumentum of margins and midrib never brownish tinged; expanded portion of lamina rotund to very broadly ovate, margins usually undulate. Heads heterogamous, disciform. Pappus setae barbellate. *Flowering December to*

March. Stony outcrops and grassland in sandy areas. *Welman 234.*

W S C N E

capensis Less.

Annual or biennial herb, up to 300 mm tall. Leaves ± conduplicate, often linear-elliptic, margins undulate. Heads heterogamous, disciform. Sterile ray flowers present; rudimentary ovary bearing numerous ciliate filamentous pappus hairs. Pappus ciliate. *Flowers with whitish ray flowers, disc flowers pale violet; April*. Dry to very dry areas in sandy or limestone soils; sometimes at the edge of pans. *Westfall 2199.*

W S C N E

galpinii F.C. Wilson

Perennial herb, up to 0,9 m high. Leaves oblanceolate to obovate, sessile or very shortly petiolate, margin minutely serrulate, white lanate-tomentose below. Heads terminal, solitary or in pairs, peduncle white or fulvous lanate. Involucral bracts linear-lanceolate and attenuate-acuminate, outer recurved. Heads homogamous, discoid. Pappus hairs barbellate. *Flowers purplish; February to May*. Stony soils, often near rivers. *Meeuse 10540.*

W S C N E

gerrardii Harv. ex F.C. Wilson

(= *D. anomala* Sond. var. *microcephala* Harv.,
= *D. anomala* Sond. subsp. *anomala* sensu Wild)

Erect perennial herb, 100–300 mm tall. Leaves linear, subobtusate at apex, callose-tipped serrulate on margins, glabrous on upper surface, densely greyish lanate beneath. Heads homogamous, discoid, 10–15 mm long, obconic. Inner involucral bracts with pungent apices, ± equalling pappus in length. Pappus setae barbellate. *Flowers purplish, fading whitish; November to July*. Wooded grassland, woodland or scrubland, on sandy soils or stony hillsides. *Ger-mishuizen 765.*

W S C N E

macrocephala DC.

Erect or decumbent perennial herb, up to 150 mm tall. Leaves elliptic, apex acute, margins entire, upper surface cobwebby at first, later glabrous, lower white-felted. Heads heterogamous, disciform, solitary, terminal, sessile. Involucral bracts narrowly lanceolate, with subsquarrose bristle tip, purplish, shiny. Pappus setae barbellate. *Flowers purplish; January*. Grassland and rocky outcrops. *Codd 10459.*

W S C N E

montana Schweick.

Subshrub, 120 mm tall. Leaves lanceolate to ovate, petiolate, margin minutely serrulate, densely lanate below. Heads solitary, pedunculate. Involucral bracts arachnoid. Pappus hairs barbellate. *Flowers purple; January to April and in July*. Rock crevices. *Codd 8689.*

W S C N E

pretoriensis C.A. Sm.

Perennial herb or subshrub, up to 500 mm tall. Leaves sessile, oblong-elliptic, amplexicaul, densely tomentose below, margin sparsely and minutely denticulate. Heads solitary, terminal. Pappus hairs plumose. *Flowers possibly mauve; April. Hillside. Smith 147* (type specimen only).

W	S	C	N	E
---	---	---	---	---

prostrata Schweick.

Prostrate perennial herb. Leaves linear, margins irregularly minutely dentate, upper surface glandular, lower densely albo-lanate. Heads solitary, sessile, large. Pappus barbellate. *Flowering July. Rocky hillsides. Smuts & Gillet 3514.*

W	S	C	N	E
---	---	---	---	---

schinzii O. Hoffm.

(= *D. arenicola* Muschl. ex Dinter,
= *D. lanata* Muschl. ex Dinter)

Semiprostrate or suberect perennial herb, up to 200 mm tall. Leaves petiolate, lamina elliptic to ovate-elliptic, margins entire, greyish or suffused brownish lanate, concolorous. Heads axillary, sessile or subsessile; neuter ray flowers present, rudimentary. Pappus 2-seriate, ciliate, inner becoming undulate-winged towards base. *Flowers with whitish or reddish disc; December to May. Grassland, sandy areas. Codd 4152.*

W	S	C	N	E
---	---	---	---	---

tomentosa Cass.

Annual herb, up to 0,6 m high. Leaves oblanceolate or lorate, sometimes conduplicate, greyish lanate below, tapering into pseudopetiole, margin minutely callous-serrate. Heads discoid, axillary. Pappus barbellate, 2-seriate, outer slender, inner undulate-winged towards base. *Flowers yellowish or whitish; July to June. Grasslands and savannas. Codd 4271.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond. subsp. zeyheri

(= *D. thyrsoflora* (Klatt) Thell.)

Perennial herb, up to 400 mm tall. Leaves oblanceolate or narrowly obovate, glabrous above, white-felted below, margins entire or obscurely serrulate. Heads terminal, solitary or in a few-headed corymb. Involucral bracts ovate, acuminate, pungent, silvery. Pappus setae plumose. *Flowers purplish; October to July. Grassland, hills or flat veld. Herman, Retief & Schrire 26.*

W	S	C	N	E
---	---	---	---	---

Dimorphotheca Vaill. ex Moench

(s. Afr.: 19 spp.) 9425000

Norlindh. 1943. *Studies in the Calenduleae*:43–70, 237–263.

caulescens Harv.

(= *Osteospermum caulescens* Harv.,
= *D. dekindtii* O.Hoffm.)

Perennial herb, 100–400 mm tall. Leaves alternate, linear-lanceolate to oblanceolate, spatulate or oblong; margins

remotely denticulate or sinuate-dentate; glandular-pubescent, glabrescent. Achenes 3–6-angular. *Flowers with rays white above, purple to mauve or coppery underneath, disc yellow; July to March. Grassland. Codd 2562.*

W	S	C	N	E
---	---	---	---	---

cuneata (Thunb.) Less.

(= *Calendula cuneata* Thunb.)

Shrub, up to 1 m high; young parts densely glandular. Leaves broadly obovate to sublinear, 10–20(–30) mm long, bases cuneate, margins pinnatifid-dentate to denticulate. Involucral bracts 6–9 mm long. Disc achenes ± 10 mm long. *Flowers with rays white above, blue-violet with an interspersed of copper beneath, disc yellow; September and February. Sandveld. Brueckner 562.*

W	S	C	N	E
---	---	---	---	---

jucunda E. Phillips

(= *Osteospermum jucundum* (E. Phillips) Norl.)

Perennial herb, 200–500 mm tall. Leaves alternate, oblanceolate to elliptic to oblong or linear; margins dentate or denticulate. Achenes narrowly triangular-obovoid to ellipsoid. *Flowers with rays deep pink on upper surface, coppery buff below, disc yellow; July to June. Grassland on mountainsides. Germishuizen 5111.*

W	S	C	N	E
---	---	---	---	---

spectabilis Schltr.

(= *Castalis spectabilis* (Schltr.) Norl.,
= *D. ecklonis* Harv. p.p.)

Perennial herb, 200–400 mm tall, at least when young, clothed with short glandular hairs. Leaves (linear-) lanceolate to elliptic, 30–70 mm long, sessile to subamplexicaul, entire or margins sometimes 1–3-dentate. Achenes suborbicular, up to 20 mm in diameter. *Flowers with lilac to purple rays, disc lilac-violet; July to June. Grassland. Kluge 161.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond.

Perennial herb, 50–250 mm tall. Leaves lanceolate-linear or linear, margin entire, dentate, pinnatifid or leaves pinnatifid. Heads solitary, terminal, on long peduncles; involucral bracts 5–8 mm long. Disc achenes ± 5 mm long. *Flowers with rays white above, bluish, purplish brown or goldish brown below, disc yellow; January to February. Grassland. Leendertz sub Tvl. Mus. 7865.*

W	S	C	N	E
---	---	---	---	---

Doellia Sch. Bip. emend. Anderb.

(s. Afr.: 1 sp.)

8939010

Wild. 1969. *Kirkia* 7: 125–132.

Anderberg. 1991. *Pl. Syst. Evol.* 176: 162.

Anderberg. 1995. *Willdenowia* 25: 21–23.

cafra (DC.) Anderb.

(= *Blumea cafra* (DC.) O. Hoffm.,
= *Conyza cafra* DC.)

Annual herb, 0,6–1,0 m high. Stems not winged. Leaves sessile, base rounded and auriculate. Peduncles

straight, heads held erect. Heads depressed-globose in a lax terminal corymb. *Flowers purplish; July to June.* Marshy or moist sandy places. *Codd & De Winter 5544.*

W S C N E

Eclipta L. (s. Afr.: 1 sp.) 9166000

Hilliard. 1977. *Compositae in Natal*: 303–304.

prostrata (L.) L.*

(= *E. alba* (L.) Hassk.,
= *E. erecta* L.)

Erect or decumbent annual herb, up to 1 m high. Leaves opposite, sessile or shortly petiolate, lanceolate to elliptic, margins irregularly toothed. Heads on long peduncles, solitary or paired, terminal and in upper leaf axils. *Flowers white, rarely yellow; July to June.* Weed along rivers, water furrows and around pans. Native to Europe and Asia. *Acocks 16750.*

W S C N E

Emilia Cass. (s. Afr.: 6 spp.) 9411010

Hilliard. 1977. *Compositae in Natal*: 501–502.
Jeffrey. 1986. *Kew Bull.* 41.4: 908–920.

limosa (O. Hoffm.) C. Jeffrey

(= *Senecio limosus* O. Hoffm.)

Leafy stems weakly crispate-pubescent to glabrous in middle part. Basal leaves oblanceolate-linear to narrowly elliptic or linear-lanceolate, cuneate to attenuate at base. Heads 1–4 in each inflorescence, lax, discoid. Involucres 4.5–6.5 mm long. Achenes glabrous to sparsely hairy. *Flowers pink to purple.* No specimens in PRE.

W S C N E

transvaalensis (Bolus) C. Jeffrey

(= *Senecio transvaalensis* Bolus)

Annual herb, up to 450 mm tall. Leaves oblong to elliptic, base broad, clasping, margins entire; slightly fleshy; thinly cobwebby at first, glabrescent. Heads solitary, discoid; involucre bracts 6 or 7, 5.0–6.5 mm long. Achenes with white clavate hairs on angles. *Flowers pink to lilac; July to June.* Poor stony or sandy soils, often becoming a weed along road verges. *Herman 133.*

W S C N E

Erigeron L. (s. Afr.: 1 sp.) 8901000

Hilliard. 1977. *Compositae in Natal*: 68.

karvinskianus DC.*

Prostrate perennial herb. Leaves narrowly elliptic, entire or toothed. Heads solitary on long nude or sparsely bracteate peduncles. Involucral bracts in several series, linear subulate. *Flowers with rays pinkish at first, later white, disc yellow; October to February and in June.*

Garden escape. Native to North America. *Van Wyk 2176.*

W S C N E

Eriocephalus L. (s. Afr.: 27 spp.) 9320000

Harvey. 1865. *F.C.* 3: 199–204.

Burt Davy. 1935. *Jl S. Afr. Bot.* 1: 106.

Muller. 1975. M.Sc. thesis, University of Pretoria.

ericoides (L.f.) Druce

(= *E. glaber* Thunb.)

Shrub, 0.3–1.0 m high. Leaves ericoid, decussate on long twigs or fasciculate on short twigs. Heads solitary on short twigs or racemose on long twigs, pedunculate, with up to 6 flowers per head. Involucre glabrous or with sparse pubescence. Rays 2, inconspicuous. *Flowers with yellow rays, red-purple disc and purple involucre bracts.* Gravel or sandy areas. *Forsyth s.n. NH 32412.*

W S C N E

hirsutus Burt Davy

Shrub, up to 200 mm tall. Leaves minute, 4–5 mm long, linear, terete, densely hirsute, fasciculate. Heads solitary, on short pedicels, densely hirsute. *Rehmann 5232* (type in Kew—not seen).

W S C N E

pubescens DC.

(= *E. eenii* S. Moore,

= *E. luederitzianus* O. Hoffm.)

Shrub, 0.3–0.5 m high. Leaves alternate on young branches, congested in axils of leaves on older branches, linear, silvery hairy. Rays inconspicuous. Involucral bracts silky. Heads on slender pedicels, axillary or subumbellate or solitary at ends of twigs. *Flowers yellow; December to February.* Savanna. *Van der Meulen 514.*

W S C N E

sp.

Shrub, up to 1.5 m high. Leaves simple or tripinnate, lobes linear. Rays conspicuous. Heads on long pedicels, umbellate, at ends of branches. *Flowers with white rays; February to August.* Rocky hillsides and sandy soil. *Meeuse 9751.*

W S C N E

Erlangea Sch. Bip. (s. Afr.: 2 spp.) 8740000

Pope. 1992. *F.Z.* 6.1: 160–162.

misera (Oliv. & Hiern) S. Moore

(= *E. schinzii* O. Hoffm.,

= *Vernonia misera* Oliv. & Hiern)

Annual or perennial herb, 0.2–1.0 m high, pilose and glandular. Leaves sessile or subsessile, alternate. Heads many, laxly corymbiform cymose; involucre bracts

lanceolate, acuminate and bristle-tipped. Pappus of caducous subplumose bristles. *Flowers purple or dark mauve; December*. Sand banks beside rivers, on flood plains and in pans, deciduous woodland, grassland. *Mugwedi (Venda Herb.) 1666.*

W S C N E

Ethulia *L.f.* (s. Afr.: 1 sp.) 8734000

Gilbert & Jeffrey. 1988. Kew Bull. 43,2: 165–193.

conyzoides *L.f.* subsp. **conyzoides**

Annual herb, up to 2 m high. Leaves lanceolate to ovate, usually less than 6 times as long as broad. Fruiting heads with up to 30 achenes, often in sessile clusters. Involucre completely rotate, not concealing any fruits. *Flowers white, pinkish or mauve; November to August*. On banks of streams and dams. *Codd & De Winter 5139.*

W S C N E

Eumorphia *DC.* (s. Afr.: 6 spp.) 9323000

Bolus. 1906. Trans. S. Afr. phil. Soc. 16: 387–388.
Compton. 1967. Jl S. Afr. Bot. 33,4: 300.

davyi *Bolus*

Shrub, 1–2 m high, glabrous. Leaves imbricate, alternate, linear, mucronulate. Heads terminal, solitary, subsessile. *Flowers with white rays, disc yellow; September to April*. On mountains, among rocks. *Venter 1155.*

W S C N E

Euryops (*Cass.*) *Cass.* (s. Afr.: 89 spp.) 9417000

Nordenstam. 1968. Opera Bot. 20: 35–409.

brevipapposus *M.D. Hend.*

Shrub, 0,5–2,0(–3,0) m high. Leaves entire, linear, flat, 15–90 × 0,8–3,0 mm. Involucre campanulate, brown or yellowish brown, involucre bracts connate to the middle or less. Pappus short and often sparse, 0,5–1,0(–1,5) mm long. Achenes densely sericeous. *Flowers yellow; July and October to December*. Scrub, bushveld or open forest; preferably in rocky places or on riverbanks. *Venter 1241.*

W S C N E

discoideus *Burtt Davy*

Perennial herb. Stems very short. Leaves narrowly linear, 30–70 × 0,7–1,5 mm, hispid especially adaxially and towards base, flat, entire or some leaves 2- or 3-lobed. Heads discoid. *Flowering November*. *Rogers 21275* (type in Kew, no specimens in PRE).

W S C N E

gilfillanii *Bolus*

Perennial herb, up to 300 mm tall. Stems very short. Leaves narrowly linear to subfiliform, canaliculate with involute margins, entire or occasionally 2- or 3-lobed, glabrous or laxly setulose. Heads radiate. *Flowers yellow; September to February*. Open grassland and rock crevices. *Codd 3686.*

W S C N E

laxus (*Harv.*) *Burtt Davy*

(= *Gamolepis laxa* Harv.)

Perennial herb, 20–200(–350) mm tall. Leaves filiform-linear, 3-lobed or pinnatipartite, sometimes entire, 10–110 mm long. Peduncles solitary. Involucral bracts connate to the middle or more. Achenes 3,5–5,0 mm long, papillate-puberulous, often only basally, sometimes glabrous. *Flowers yellow; June to February*. Grassland, also in sandy-stony soil among rocks and boulders on mountainsides, koppies and tops of krantzies. *Codd & De Winter 3204.*

W S C N E

pedunculatus *N.E. Br.*

(= *E. rogersii* Burtt Davy)

Shrub, up to 1 m high. Leaves linear-filiform, 8–80 mm long, glabrous, 3-forked from or above (seldom below) the middle or pinnatipartite. Peduncles solitary, 60–250 (–350) mm long. Involucral bracts connate below the middle with partly overlapping margins or sometimes connate to the middle or more. *Flowers yellow; July to June*. Mountain grassland and on rocky outcrops. *Scheepers 944.*

W S C N E

transvaalensis *Klatt* subsp. **transvaalensis**

(= *E. multinervis* N.E. Br.)

Perennial herb, 20–250 mm tall. Leaves pinnatifid with usually 4–8 pairs of lobes, glaucous or greyish green; rachis 2–5 mm wide, (5–)8–12-nerved. Peduncles solitary. Involucral bracts connate to the middle or more. *Flowers yellow; July to April*. Grassland and in shallow soil over rocks. *Acocks 11539.*

W S C N E

transvaalensis *Klatt* subsp. **setilobus** (*N.E. Br.*) *B. Nord.*

(= *E. setilobus* N.E. Br.,
= *E. striatus* N.E. Br.)

Perennial herb, 20–250 mm tall. Leaves pinnatipartite with 2–8 pairs of lobes or 3-forked (seldom entire), ± pure green; rachis 0,5–2,0(–3,0) mm wide, 1–5(–8)-nerved. Peduncles and involucre bracts as in subsp. *transvaalensis*. *Flowers yellow; August to January*. Short grassland on hills and mountains, often rocky or stony places, sometimes rock crevices. *Codd 544.*

W S C N E

Felicia *Cass.* (s. Afr.: 77 spp.) 8919000

Grau. 1973. Mitt. bot. StSamml., Münch. 9: 195–705.

bechuana Mattf.

Dwarf shrub, up to 200 mm tall. Leaves linear to narrowly lanceolate, hairy and glandular. Involucral bracts imbricate, in 4 rows. Achenes thickly covered with long hairs. *Flowers white; August and December to April. Rock crevices. Codd 4337.*

W	S	C	N	E
---	---	---	---	---

clavipilosa Grau subsp. **transvaalensis** Grau

Shrub, up to 0,6 m high. Leaves lanceolate to oblanceolate, up to 6 mm broad, pubescent. Involucral bracts imbricate, in 3 or 4 rows, up to 5 mm long. Achenes shortly hairy. *Flowers white; July to June. Sandy soil or hillsides. Codd & Dyer 7719.*

W	S	C	N	E
---	---	---	---	---

fascicularis DC.

Dwarf shrub, up to 300 mm tall. Leaves acicular with strongly broadened bases, sessile, often with axillary tufts of leaves. Peduncles often with stalked glands. Involucral bracts imbricate, in 4 rows. Achenes shortly hairy. *Flowers violet; September to May. Grassland. Scheepers 969.*

W	S	C	N	E
---	---	---	---	---

filifolia (Vent.) Burtt Davy subsp. **filifolia**

(= *Aster filifolius* Vent.,
= *Diplopappus filifolius* (Vent.) DC.)

Shrub, 0,6–1,5 m high. Leaves linear, elliptic to round in cross section, glabrous, 8–30 mm long. Involucral bracts imbricate, in 3 or 4 rows. Achenes with long, silky villous hairs. *Flowers purple, rarely white; July to June. On hillsides or mountainsides, grassland. Van der Schijff 5650.*

W	S	C	N	E
---	---	---	---	---

fruticosa (L.) G. Nicholson subsp. **brevipedunculata** (Hutch.) Grau

Shrub, up to 1,3 m high. Leaves flat, narrowly lanceolate to oblanceolate, glabrous. Heads sessile, peduncles leafy up to heads. Involucral bracts imbricate, in 4 rows. Achenes with long, silky villous hairs. *Flowers violet to white; January and May to August. Mountainsides. Meeuse 10242.*

W	S	C	N	E
---	---	---	---	---

mossamedensis (Hiern) Mendonça

(= *Aster luteus* (N.E. Br.) Hutch.,
= *Felicia lutea* N.E. Br.)

Perennial herb, up to 300 mm tall. Involucral bracts imbricate, in 3 rows. *Flowers with yellow rays and disc; July to June. Grassland. Codd 6575.*

W	S	C	N	E
---	---	---	---	---

muricata (Thunb.) Nees subsp. **muricata**

(= *Aster muricatus* Thunb.)

Shrub, up to 0,7 m high; young stems thinly hispid. Leaves linear, with scattered hairs, often with axillary tufts of leaves. Peduncles hairy or glabrous. Involucral bracts imbricate, in 4 rows. Achenes shortly hairy.

Flowers white, pink, blue or mauve; July to June. Grassland. Hanekom 1682.

W	S	C	N	E
---	---	---	---	---

muricata (Thunb.) Nees subsp. **cinarens** Grau

(= *Detris dinteri* S. Moore)

Shrub, up to 0,7 m high. Stems thickly villous. *Flowers white or mauve; February to May. Sandy soil. Arnold & Musil 505.*

W	S	C	N	E
---	---	---	---	---

muricata (Thunb.) Nees subsp. **strictifolia** Grau

Shrub, up to 0,7 m high. Stems thinly hispid. Leaves linear, glabrous, often with axillary tufts of leaves; tightly pressed to stem. Peduncles hairy or glabrous. Involucral bracts imbricate, in 4 rows. Achenes shortly hairy. *Flowers white or mauve; October to December and March to July. Grassland. Henrici 1673.*

W	S	C	N	E
---	---	---	---	---

quinquenervia (Klatt) Grau

(= *Aster quinquenervius* Klatt,
= *Aster woodii* Klatt)

Perennial herb, up to 0,6 m high. Leaves in a basal rosette and scattered along stem, obovate to elliptic, up to 30 mm broad, with 3–5 nerves from base, hairy to glabrous. Involucral bracts equal, in 3 rows. Achenes shortly hairy. *Flowers blue; August to December. Grassland. Devenish 1484.*

W	S	C	N	E
---	---	---	---	---

rosulata Yeo

Perennial herb, up to 300 mm tall. Stems unbranched, each with a single head. Leaves in a basal rosette, elliptic to obovate, hairy. Involucral bracts equal, in 3 rows. Achenes shortly hairy. *Flowers blue; September to October. Grassland. Mohle 422.*

W	S	C	N	E
---	---	---	---	---

Flaveria Juss. (s. Afr.: 1 sp.) 9282000

Hilliard. 1977. Compositae in Natal: 324–325.

bidentis (L.) Kuntze*

(= *F. contrayerba* (Cav.) Pers.)

Annual herb, up to 1 m high. Leaves opposite, lanceolate to elliptic, margins subentire or callose-serrulate. Heads discoid, few-flowered, many tightly clustered in shortly pedunculate terminal and axillary secondary heads. Pappus absent. *Flowers yellow; October to July. A weed of cultivation and roadsides, on sandy soils, often streamsides or damp ditches. Native to tropical America. Scheepers 1501.*

W	S	C	N	E
---	---	---	---	---

Gaillardia Foug. (s. Afr.: 2 spp.) 9306000

Hilliard. 1977. Compositae in Natal: 327–328.

pulchella Foug.*

Annual herb, up to 500 mm tall. Leaves alternate, mostly sessile, oblong or spatulate, margins entire, obscurely toothed or lobed. Heads solitary on long, nude peduncles terminating branch tips. Pappus of long-awned scales. *Flowers with rays yellow in upper half, purple-red in lower, disc yellow; February to March.* Escaped from cultivation; in disturbed places. Native to southern United States and Mexico. *Zambatis* 40.

W	S	C	N	E
---	---	---	---	---

Galinsoga Ruiz & Pav. (s. Afr.: 2 spp.) 9246000

Hilliard. 1977. *Compositae in Natal*: 322–323.

ciliata (Raf.) Blake*

(= *Adventina ciliata* Raf.)

Annual herb, up to 500 mm tall. Peduncle hairs long and spreading with some long glandular hairs. Receptacular paleae commonly not trifid. Pappus scales with terminal awn. *Flowers with white rays, disc white or yellow; January to February and May to August.* Weed in disturbed places. Native to South America. *Venter* 28.

W	S	C	N	E
---	---	---	---	---

parviflora Cav.*

(= *Adventina parviflora* Raf.)

Annual herb, up to 500 mm tall. Peduncle hairs short, appressed-ascending, with a few short glandular hairs. Receptacular paleae trifid. Pappus scales without marked terminal awn. *Flowers white; October to July.* Weed in gardens and waste places. Native to South America. *Scheepers* 404.

W	S	C	N	E
---	---	---	---	---

Gamochaeta Wedd. (s. Afr.: 5 spp.) 8992060

Hilliard. 1983. *F.S.A.* 33,7,2: 17–29.

Kerguelen. 1987. *Lejeunia* 120: 140.

Anderberg. 1991. *Opera Bot.* 104: 155–157.

coarctata (Willd.) Kerguelen*

(= *Gamochaeta spicata* (Lam.) Cabrera,

= *Gnaphalium spicatum* Lam.,

= *G. coarctatum* Willd.)

Annual or biennial herb, up to 500 mm tall. Leaves markedly discolorous, upper surface glabrescent, lower white tomentose, in a basal rosette; cauline leaves smaller. Heads in small glomerules or spikes arranged in long racemose inflorescence. *Flowers whitish, tipped reddish purple; November to February.* Damp places and weed of cultivation. Native to South America. *Bredenkamp* 596.

W	S	C	N	E
---	---	---	---	---

pennsylvanica (Willd.) Cabrera*

(= *Gnaphalium peregrinum* Fernald,

= *G. pennsylvanicum* Willd.)

Herb, up to 400 mm tall. Leaves spatulate, not discolorous. Heads in small axillary glomerules racemously

arranged. *Flowers whitish, tipped red purple; April to November.* Damp places and weed of cultivation. Native to North America. *Ellery* 254.

W	S	C	N	E
---	---	---	---	---

subfalcata (Cabrera) Cabrera*

(= *Gnaphalium subfalcatum* Cabrera)

Annual herb, up to 350 mm tall. Lower leaves spatulate, upper linear-lanceolate, folded, tips recurved, grey-green silky woolly, not discolorous. Heads in small woolly glomerules, racemously arranged at branch tips. *Flowers white, tipped red-purple; August to October and in May.* Weed of cultivation and disturbed places. Native to Argentina. *Kings* 1849.

W	S	C	N	E
---	---	---	---	---

Garuleum Cass. (s. Afr.: 8 spp.) 9426000

Hilliard. 1977. *Compositae in Natal*: 515–519.

woodii Schinz

Small shrub, up to 0.6 m high, all parts rough with conspicuous glandular hairs. Leaves once or twice pinnatisect, ultimate segments very narrow, ± 1 mm. Involucral bracts in several series (± 4), outer much shorter than inner. *Flowers with blue or white rays, disc yellow; November to May.* Rocky slopes and cliffs. *Scheepers* 1591.

W	S	C	N	E
---	---	---	---	---

Gazania Gaertn. (s. Afr.: 17 spp.) 9434000

Roessler. 1959. *Mitt. bot. StSamml., Münch.* 3: 364–414.

krebsiana Less. subsp. **arctotoides** (Less.) Roessler

(= *G. arctotoides* Less.)

Perennial herb, up to 200 mm tall. Leaves mostly pinnatifid. Inner involucral bracts obtuse to subacute, 3–5 mm long, free part shorter than fused part. *Flowers with rays pale yellow to white with green stripe below, disc yellow; October to July.* Grassland. *Arnold* 225.

W	S	C	N	E
---	---	---	---	---

krebsiana Less. subsp. **serrulata** (DC.) Roessler

(= *G. munroi* E. Phillips,

= *G. pygmaea* Sond.)

Perennial herb, up to 200 mm tall. Leaves mostly entire. Inner involucral bracts obtuse to subacute, 3–4 mm long; free part of inner involucral bracts shorter than fused part. *Flowers with rays mostly white with green, brown or purple band below, sometimes pure yellow, disc yellow; July to June.* Grassland. *Kerfoot* 8362.

W	S	C	N	E
---	---	---	---	---

Geigeria Griess. (s. Afr.: 21 spp.) 9090000

Merxmüller. 1953. Mitt. bot. StSamml., Münch. 1: 239–316.

Merxmüller. 1967. F.S.W.A. 139: 74–77.

Merxmüller. 1967. Mitt. bot. StSamml., Münch. 6: 486.

Hilliard. 1977. Compositae in Natal: 283–286.

acaulis (Sch. Bip.) Benth. & Hook. f. ex Oliv. & Hiern

Stemless, rosulate herb, up to $\pm$ 200 mm tall. Leaves linear-lanceolate, tapering into a short petiole-like base, densely white-woolly. *Flowers yellow or pale creamy yellow; June and September to November. Rocky outcrops. Meeuse 10599.*

W S C N E

aspera Harv. var. *aspera*

Stemmed herb, up to 300 mm tall. Branches erect. Leaves linear or linear-lanceolate, glandular-punctate, margins entire or remotely denticulate. Heads sessile, solitary at each forking of branches. *Flowers yellow; November to April. Grassland, tending to spread in overgrazed veld. Codd 3629.*

W S C N E

brevifolia (DC.) Harv.

Shrub, up to 1 m high. Leaves small, linear to linear-elliptic, up to 15 mm long. Branches very narrowly winged. Heads solitary, terminally and axillary. *Flowers yellow; January to June. In grassland or savanna, tending to spread to disturbed veld. Codd 2643.*

W S C N E

burkei Harv. subsp. *burkei* var. *burkei*

Perennial herb, up to 0,6 m high, with stems, erect, branched. Leaves linear, filiform. Heads 10–12 mm in diameter. *Flowers yellow; October to July. Grassland and rocky outcrops. Codd 3668.*

W S C N E

burkei Harv. subsp. *burkei* var. *elata* Merxm.

Perennial herb, up to 1 m high, with stems, erect, branched, hairy, strongly woody. Leaves linear. Heads globose-depressed. *Flowers yellow; November to August. Grassland. Codd 8286.*

W S C N E

burkei Harv. subsp. *burkei* var. *hirtella* Merxm.

Herb, up to 400 mm tall, with stems, branched, erect, densely hairy. Leaves linear, margins strongly involute. *Flowers yellow; December to March and in June. Grassland. Codd 8323.*

W S C N E

burkei Harv. subsp. *burkei* var. *intermedia* (S. Moore) Merxm.

Herb, up to 300 mm tall, with erect, unbranched stems. Rootstock strong, thick. Leaves linear. Heads large, up to 15 mm in diameter, solitary, at ends of branches. *Flowers yellow; October to April. Grassland. Codd 2196.*

W S C N E

burkei Harv. subsp. *burkei* var. *zeyheri* (Harv.) Merxm.

Perennial herb, up to 500 mm tall, with stems, erect, branched. Leaves linear, filiform. Heads 6–8 mm in diameter. *Flowers yellow; September to June. Grassland. Acocks 12408.*

W S C N E

burkei Harv. subsp. *diffusa* (Harv.) Merxm.

Prostrate perennial herb, with branched stems. Leaves linear, filiform. *Flowers yellow; December to May. Grassland and rocky places. Crosby 79.*

W S C N E

burkei Harv. subsp. *fruticulosa* Merxm.

Subshrub, up to 0,7 m high. Stems erect, pseudodichotomously branched. Leaves linear to narrowly lanceolate. Heads sessile, solitary, axillary or terminal. *Flowers yellow; October to June. Bushveld. Codd 4831.*

W S C N E

burkei Harv. subsp. *valida* Merxm.

Perennial herb, up to 0,6 m high. Stems erect, unbranched from woody rootstock. Leaves linear. Heads up to 25 mm in diameter, solitary, at ends of branches. *Flowers yellow; November to March. Grassland. Codd 8256.*

W S C N E

elongata Alston

Prostrate perennial herb. Leaves long, linear. Heads solitary, axillary, on one side of branches; very small and narrow, 7–8 $\times$ 4 mm. Inner involucre bracts acuminate. *Flowers yellow; November to May. Grassland or rocky outcrops. Codd 3728.*

W S C N E

filifolia Mattf.

(= *G. africana* Griess. subsp. *filifolia* (Mattf.) Merxm.,

= *G. passerinoides* Harv. p.p.)

Stemless, rosulate herb, up to 150 mm tall. Leaves linear filiform, long, remotely and minutely denticulate. Several heads crowded together near ground level. Outer involucre bracts with long linear, leaf-like appendage, inner long-acuminate with ciliate margins. *Flowers yellow; September to March and in June. Grassland. Welman 440.*

W S C N E

obtusifolia L. Bolus

(= *G. arenicola* Muschl. ex Dinter,

= *G. plumosa* Muschl. subsp. *obtusifolia* (L. Bolus) Merxm.)

Stemmed, hairy perennial herb or shrub, up to 0,8 m high. Leaves elliptic to oval or oblanceolate, apex obtuse, mucronate, sessile. Heads solitary. *Flowers yellow; March. Grassland on sandy soil, tending to spread to disturbed places. Phalatsse 13.*

W S C N E

ornativa *O. Hoffm.*

(= *G. africana* Griess. subsp. *ornativa* (O. Hoffm.) Merxm.)

Semiprostrate or erect, stemmed perennial herb, up to 200 mm tall. Leaves narrowly lanceolate to linear, distantly and minutely denticulate, ciliate along petiole-like base. Heads solitary or in small groups in forking of branches. *Flowers yellow; September to May.* Dry woodland, bushveld or grassland. *Codd 5212.*

W S C N E

Gerbera *L.* (s. Afr.: 13 spp.)

9528000

Hansen. 1985. *Opera Bot.* 78: 5–36.

Hind. 1992. *Kew Bull.* 47, 1: 110.

ambigua (*Cass.*) *Sch. Bip.*

(= *G. kraussii* Sch. Bip.,

= *G. discolor* Sond. ex Harv.)

Acaulescent perennial herb. Leaves entire or sinuate, with remote, obscure teeth, lanceolate, oblanceolate, elliptic, oblong or ovate to subrotund, lower surface persistently whitish or lemon tomentose. Scapes not swollen below head. Rays biseriate, prominent. *Flowers with rays white above, pink, mauve or red below, rarely yellow, disc white, yellow, reddish or blackish; July to June.* Submontane areas, open woodland, savanna, along rivers or damp grassland. *Codd 4715.*

W S C N E

aurantiaca *Sch. Bip.*

Acaulescent perennial herb. Leaves entire, or obscurely and remotely denticulate, blade decurrent on petiole, lower surface woolly to woolly-tomentose when immature. Scapes not widened below head. Rays biseriate, prominent. *Flowers with red or orange rays, disc pinkish, reddish or black; November to December.* Grassland among rocky outcrops, on hillsides, in woods. *Du Toit 81.*

W S C N E

galpinii *Klatt*

Acaulescent perennial herb. Leaves entire or rarely obscurely denticulate; lanceolate to narrowly elliptic, decurrent on petiole; glabrous or almost glabrous. Scapes not widened below head. Rays biseriate, prominent. *Flowers with rays yellow or white, rarely tinged mauve, disc purplish, red, mauve or yellow; September to December.* Marshy or vleis. *Devenish 106.*

W S C N E

jamesonii *Adlam*

Acaulescent perennial herb. Leaves pinnatifid, large. Scapes not widened below head. Heads large. Rays biseriate, conspicuous. *Flowers yellow, orange, red, white or pink; July to June.* Bushveld, grassy slopes, in some shade. *Codd 8035.*

W S C N E

piloselloides (*L.*) *Cass.*

(= *Piloselloides hirsuta* (Forssk.) C. Jeffrey)

Rosulate, acaulescent perennial herb. Leaf with base cuncate, decurrent or rarely narrowly cordate; lower

leaf surface subglabrous, pilose-villose or sometimes with thin, soft, white tomentum. Scapes widened below head. Rays biseriate, very short. *Flowers with rays white or tinged pink below, but also yellow and red, disc yellow, white or as the rays; July to June.* Submontane; open grassland, savanna, grassy slopes, rocky soil, along streams. *Bredenkamp 73.*

W S C N E

viridifolia (*DC.*) *Sch. Bip.* subsp. **viridifolia**

(= *G. glandulosa* Dummer,

= *G. plantaginea* Harv.,

= *G. speciosa* S. Moore)

Acaulescent perennial herb. Roots thong-like, thick but not swollen. Leaves lanceolate, elliptic, oblong or rarely ovate, cuneate, with remote crenate, distinct teeth; young leaves and scapes moderately pilose-villose with whitish hairs. Scapes not swollen below head; contemporary with leaves. Rays biseriate, prominent. *Flowers with rays white above, pink below or even yellow, disc white, yellow or tinged greenish; July to June.* Open grassland, savanna, open woodland; riverbanks and mountainsides. *Liebenberg 8406.*

W S C N E

viridifolia (*DC.*) *Sch. Bip.* subsp. **natalensis** (*Sch. Bip.*)

H.V. Hansen

(= *G. natalensis* Sch. Bip.,

= *G. tuberosa* Klatt)

Acaulescent perennial herb. Roots swollen, fusiform, tuberous. Leaves entire or obscurely wavy, rarely remotely denticulate; young leaves and scapes very long villose with silky whitish hairs. Scapes and rays as in subsp. *viridifolia*, but scapes earlier than leaves. *Flowers with rays white above, pink or reddish below, disc yellow or white; August to October.* Open grassland, often on slopes. *Rauh & Schlieben 9782.*

W S C N E

Gnaphalium *L.* (s. Afr.: 15 spp.)

8992000

Hilliard. 1983. *F.S.A.* 33, 7, 2: 17–29.

confine *Harv.*

(= *G. drakensbergense* Markötter)

Decumbent or erect annual herb, up to 200 mm tall. Leaves oblanceolate to linear-oblong, apex obtuse to subacute, mucronate, grey-woolly. Compound inflorescence closely surrounded by leaves. Involucral bracts with opaque tips, acute or subacute. *Flowers dirty white or palest buff, sometimes tinged purple; July to October.* Damp places such as riverbanks or streambanks etc.; sometimes behaving as a weed. *Kings 1759.*

W S C N E

englerianum (*O. Hoffm.*) *Hilliard & B.L. Burt*

(= *Amphidoxa engleriana* O. Hoffm.)

Perennial herb. Leaves spatulate, clad in silvery 'tissue-paper' indumentum. Heads subcorymbosely arranged, up to 4 mm long. Outer involucral bracts of mature heads glabrous on back. Pappus bristles, if pre-

sent, either free at base or cohering lightly by patent cilia. *Flowers: involucre bracts golden-brown, tips snow-white; February.* Wet or seasonally wet places. *Marloth 1004.*

W S C N E

filagopsis Hilliard & B.L. Burt

(= *Amphidoxa filaginea* Ficalho & Hiern)

Erect or decumbent perennial herb. Leaves linear or oblong-linear, acute or subacute, silvery grey tomentose or silky tomentose. Outer involucre bracts glabrous on backs. Heads subcorymbosely arranged, surrounded by leaves. *Flowers snow white; September to May.* Wet or seasonally wet places. *Sutton 278.*

W S C N E

nelsonii Burt Davy

Erect or decumbent perennial herb, 40–200 mm tall. Leaves linear-lanceolate, acute, mucro conspicuous, white tomentose. Heads in congested corymbose clusters, closely surrounded by leaves. Outer involucre bracts cobwebby on back; inner bracts obtuse to subacute. *Flowers dirty white or white; October to December.* Seasonally wet places. *Jacobsen 1040.*

W S C N E

polycaulon Pers.*

Decumbent or erect annual herb, up to 250 mm tall. Leaves spatulate or oblanceolate, thinly grey tomentose to glabrescent, not discolorous. Heads in small stalked or sessile clusters, racemosely arranged. *Flowers pale buff, sometimes purplish tipped; August to October and in March.* Muddy or sandy streambanks and similar damp places; weed. Native to India. *Van der Schijff 3131.*

W S C N E

Guizotia Cass. (s. Afr.: 1 sp.)

9222000

Tutin *et al.* 1976. *Fl. Europ.* 4: 139.

abyssinica (L.f.) Cass.*

(= *G. oleifera* DC.,
= *Verbesina sativa* Roxb.)

Annual herb, up to 2 m high. Leaves oblong-lanceolate, serrate to subentire, sessile, amplexicaul, glandular hairy. Pappus absent. *Flowers yellow; September to October.* Weed of cultivation. Native to North and tropical Africa. *Thorncroft 10706.*

W S C N E

Gymnopentzia Benth. (s. Afr.: 1 sp.)

9364000

Hilliard. 1977. *Compositae in Natal:* 362.

bifurcata Benth.

(= *G. pilifera* N.E. Br.,
= *Athanasia turbinata* Burt Davy)

Erect or decumbent shrub, up to 1.2 m high. Leaves opposite, bases sheathing, blades simple or 1–3 times

dichotomously forked, lobes narrowly linear, glabrous to thinly or densely villous. Heads in terminal corymbs. *Flowers bright yellow; February and May.* Open grassland, rocky gullies and on rock outcrops. *Young 1477.*

W S C N E

Haplocarpha Less. (s. Afr.: 5 spp.)

9432030

Harvey. 1865. *F.C.* 3: 464–466.

Lewin. 1922. *Feddes Reprium* Beih. 11.

Hilliard. 1977. *Compositae in Natal:* 537–540.

lyrata Harv.

(= *H. leichtlinii* N.E. Br.)

Perennial herb, up to 300 mm tall. Involucre bracts in several series. Pappus scales tapering into very slender, bristle-shaped, scabrous point. *Flowers with yellow rays; October to January and in April.* Streambanks and damp places. *Codd 2438.*

W S C N E

nervosa (Thunb.) P. Beauv.

Perennial herb, up to 200 mm tall. Leaves in a basal rosette. Involucre bracts biseriate. Pappus scales very short or rudimentary; basal coma of short delicate hairs. *Flowers with pale yellow rays, sometimes tinged greenish grey below, disc yellow; September to November.* Damp grassland, marshes and marshy streambanks. *Turner 1126.*

W S C N E

scaposa Harv.

(= *H. thunbergii* DC.)

Perennial herb, up to 0.6 m high. Involucre bracts in several series. Achenes with long-acuminate pappus scales, longer than achenes and conspicuous basal coma of long silky hairs. *Flowers with pale yellow rays, disc yellow; July to June.* Grassland. *Codd 8086.*

W S C N E

Helianthus L. (s. Afr.: 3 spp.)

9200000

Hilliard. 1977. *Compositae in Natal:* 309–311.

debilis Nutt. subsp. **cucumerifolius** (Torr. & Gray) Heiser*

(= *H. cucumerifolius* Torr. & Gray)

Annual herb, up to 2 m high. Stems, leaves and involucre bracts scabrid-pubescent. Involucre bracts generally 4 mm wide or narrower, usually lanceolate and gradually attenuate. *Flowers with yellow rays and purplish disc; December.* Escaped from cultivation and occurring as weed in waste places. Native to southeastern United States. *Liebenberg 3269.*

W S C N E

Helichrysum Mill. (s. Afr.: 243 spp.)

9006000

Hilliard. 1983. *F.S.A.* 33,7,2: 61–310.

Key to groups within *Helichrysum* after Hilliard in
F.S.A. 33,7,2: 61–65 (1983).

- 1a Heads depressed-globose, large (containing at least 300 flowers), achenes glabrous though epidermis often rough-looking from imbricate cells. Coarse annuals, biennials, perennials or shrubs; involucre bracts frequently bright yellow, sometimes brown outside or wholly brown, very rarely white, whitish or pink Group 30 (*H. albilanatum*, *H. aureolum*, *H. aureum* var. *argenteum*, *H. aureum* var. *candidum*, *H. aureum* var. *monocephalum*, *H. cooperi*, *H. difficile*, *H. edwardsii*, *H. leslei*, *H. milleri*, *H. molestum*, *H. mutabile*, *H. setosum*, *H. transmontanum*)
- 1b Heads cylindric, turbinate, campanulate or subglobose, never depressed-globose 2
- 2a Heads 4–5 mm long, containing 5 flowers, involucre bracts opaque white or sometimes rosy, ovaries glabrous. Small shrubs, leaf margins flat or undulate Group 1 (*H. zeyheri*)
- 2b Combination of characters not as above 3
- 3a Heads either homogamous containing less than 30 flowers or heterogamous with less than 20 flowers, involucre bracts $\pm$ as long as flowers, not radiating (though occasionally squarrose), bright yellow, receptacle smooth or honeycombed (not fimbriate) 4
- 3b Involucre bracts either not bright yellow or heads with more than 30 flowers or bracts radiating or receptacle fimbriate or characters otherwise not as combined above 10
- 4a Ovaries glabrous 5
- 4b Ovaries hairy 7
- 5a Heads generally heterogamous ((0)1–3 female flowers) Group 2 (*H. callicomum*)
- 5b Heads homogamous 6
- 6a Pappus wanting or if present, leaf bases decurrent in long stem wings Group 3 (*H. epapposum*)
- 6b Pappus present, leaf bases not decurrent Group 6 (*H. glomeratum*, *H. spodiophyllum*, *H. subglomeratum*)
- 7a Pappus either wanting or if present, leaf bases decurrent in long narrow stem wings Group 4 (*H. odoratissimum*)
- 7b Pappus present, leaf bases not decurrent in long wings 8
- 8a Pappus bristles nude below, not cohering Group 6 (*H. glomeratum*, *H. spodiophyllum*, *H. subglomeratum*)
- 8b Pappus bristles with patent cilia at base, cohering or not 9
- 9a Stems $\pm$ uniformly leafy throughout, leaves mostly 4–20 $\times$ 1–8 mm Group 12 (*H. caespitium*, *H. lineare*, *H. umbraculigerum*, *H. uninervium*)
- 9b Plants with tufts of radical leaves up to $\pm$ 80–250 $\times$ 15–50 mm Group 21 (*H. acutatum*, *H. dasymallum*, *H. oreophilum*)
- 10a (3) Heads homogamous, receptacle fimbriate, ovaries glabrous 11
- 10b Heads heterogamous or if homogamous, either receptacle smooth or honeycombed but not fimbriate or ovaries hairy 16
- 11a Shrubs or subshrubs, hard- or soft-wooded 12
- 11b Perennial herbs, frequently with tufts of radical leaves 14
- 12a Leaves (ignoring reduced upper ones) linear, lanceolate, oblanceolate or narrowly elliptic Group 8 (*H. aureonitens*, *H. cymosum* subsp. *calvum*, *H. interjacens*, *H. kraussii*, *H. melanacme*, *H. polycladum*)
- 12b Leaves (ignoring upper reduced ones) broadly elliptic, ovate or rhomboid-elliptic to orbicular or panduriform 13
- 13a Softwooded shrubs or subshrubs, branches often tangled or $\pm$ scandent; in shrub communities and on forest margins Group 18 (*H. panduratum* var. *transvaalense*)
- 13b Erect twiggy shrubs; among rock outcrops Group 19 (*H. homilochrysum*, *H. lepidissimum*, *H. mimetes*, *H. rolfii*)
- 14a Stems tufted, wiry, decumbent Group 22 (*H. chrysargyrum*, *H. psilolepis*, *H. splendidum*)
- 14b Stems solitary or subsolitary, stout, erect 15
- 15a Involucre bracts $\pm$ equalling flowers, not radiating, though squarrose in 1 species Group 23 (*H. allioides*, *H. calocephalum*, *H. coriaceum*, *H. gerberifolium*, *H. harveyanum*, *H. miconiifolium*, *H. mundtii*, *H. nudifolium*, *H. oxyphyllum*, *H. pallidum*, *H. pilosellum*, *H. thapsus*)
- 15b Involucre bracts exceeding flowers, radiating, sometimes squarrose as well in 1 species Group 24 (*H. appendiculatum*, *H. cephalodeum*, *H. mixtum* var. *mixtum*, *H. mixtum* var. *grandiceps*, *H. opacum*, *H. subulatum*)
- 16a (10) Receptacle paleate 17
- 16b Receptacle smooth, honeycombed or fimbriate, but not paleate 18
- 17a Heads $\pm$ 5 mm long, many, either clustered or in large corymbose panicle, involucre bracts white or brownish yellow Group 20 (*H. platypterum*)
- 17b Heads $\pm$ 10 mm long, solitary or few in lax corymbs, involucre bracts lemon-yellow Group 29 (*H. argyrolepis*, *H. confertifolium*, *H. herbaceum*, *H. junodii*, *H. mariepspicum*, *H. reflexum*, *H. summo-montanum*, *H. wilmsii*)
- 18a Leaves on petioles up to 70 mm long, blade ovate to subrotund, up to $\pm$ 130 $\times$ 110 mm, base cordate; heads 2–3 mm long, many in small clusters arranged in spreading corymbose panicles Group 16 (*H. hypoleucum*)
- 18b Either leaves or heads not as above 19
- 19a Heads 7–20 mm long, involucre bracts exceeding flowers, radiating, usually white, pink, rose or combinations of these colours, often with brown as well, sometimes yellow or light brown 20
- 19b Heads up to 6 mm long, involucre bracts either equalling or longer than flowers, erect or radiating, variously coloured, or if heads 7 mm long, then bracts either equalling flowers and not radiating or bright canary-yellow 24
- 20a Annuals; arid areas Group 15 (*H. argyrosphaerum*, *H. candolleianum*, *H. cerastioides* var. *cerastioides*, *H. paronychioides*, *H. spiciforme*)
- 20b Herbaceous perennials, subshrubs or shrubs 21
- 21a Ovaries glabrous, pappus bristles without patent cilia at base, not cohering 22
- 21b Ovaries hairy or rarely glabrous and then pappus bristles either with minute patent cilia at base, cohering or not or bristles fused at base 23
- 22a Involucre bracts mostly white with some brown or crimson, if yellow, then plants either mat-forming or herbaceous perennials Group 29 (*H. argyrolepis*, *H. confertifolium*, *H. herbaceum*, *H. junodii*, *H. mariepspicum*, *H. reflexum*, *H. summo-montanum*, *H. wilmsii*)
- 22b Involucre bracts yellow or light brown; shrubs or coarse woody perennials Group 30 (*H. albilanatum*, *H. aureolum*, *H. aureum* var. *argenteum*, *H. aureum* var. *candidum*, *H. aureum* var. *monocephalum*, *H. cooperi*, *H. difficile*, *H. edwardsii*, *H. leslei*, *H. milleri*, *H. molestum*, *H. mutabile*, *H. setosum*, *H. transmontanum*)
- 23a Herbaceous perennials with 1 or more tufts of radical leaves, flowering stems simple, erect, usually 1-headed, rarely (in 2 or 3 species) bearing several heads in a lax corymbose panicle, involucre bracts usually self-coloured, sometimes parti-coloured in *H. adenocarpum* Group 28 (*H. adenocarpum* subsp. *adenocarpum*, *H. ecklonis*, *H. monticola*)
- 23b Plants mat-forming or tufted, leaves linear to lanceolate-elliptic, sessile; involucre bracts white or sometimes palest yellowish buff outside, bases of pappus bristles cohering strongly by patent cilia Group 25 (*H. chiono-sphaerum*, *H. swynnertonii*)
- 24a (19) Involucre bracts in 4 series, 2 outer short, webbed together with wool, often $\pm$ persistent, 2 inner soon caducous, tip of lamina with an opaque median patch often drawn out into an acute or acuminate and then recurved tip, or tip truncate and often $\pm$ emarginate; woolly herbs, often prostrate or mat-forming, leaves elliptic-oblong to spatulate, obovate or subrotund Group 14 (*H. spiralepis*)
- 24b Involucre bracts not as described above 25

- 25a Involucral bracts silvery, white, white and rose or wholly rose, or white with brown tips or pale brown outside; receptacle smooth or honeycombed or rarely fimbriiferous and then heads homogamous 26
- 25b Involucral bracts straw-coloured, tawny or various shades of yellow or brown, red tints sometimes associated with these colours; if white or whitish, or with some rose or wholly rose, then heads heterogamous and receptacle fimbriiferous 28
- 26a Twiggy shrublet with stiff branches and hard spatulate leaves; heads $\pm 4 \times 1$ mm tightly clustered **Group 2**
(*H. callicomum*) 27
- 26b Habit, foliage or heads not as above 27
- 27a Tips of inner involucral bracts either $\pm$ equalling flowers and not radiating or minutely radiating; leaves generally linear with revolute margins, if broader, receptacle either fimbriiferous or with flattened tubercles **Group 12**
(*H. caespitium*, *H. lineare*, *H. umbraculigerum*, *H. uninervium*) 28
- 27b Tips of involucral bracts mostly exceeding flowers, radiating or squarrose; leaves mostly broad with flat margins, or if linear with revolute margins, receptacle honeycombed; if bracts $\pm$ equalling flowers and either not radiating or minutely radiating, leaves not linear with revolute margins **Group 15** (*H. argyrosphaerum*, *H. candolleianum*, *H. cerastioides* var. *cerastioides*, *H. paronychioides*, *H. spiciforme*) 29
- 28a Shrubs or bushy perennials, leaf blade woolly, elliptic to ovate or obovate contracted to petiole-like base, heads homogamous **Group 19** (*H. homilochrysum*, *H. lepidissimum*, *H. mimetes*, *H. rudolfii*) 29
- 28b Either habit or foliage not as above or heads heterogamous 29
- 29a Involucral bracts white or sometimes partly or wholly rosy, receptacle fimbriiferous 30
- 29b Involucral bracts straw-coloured, tawny or various shades of yellow or brown, red tints sometimes associated with these colours 31
- 30a Ovaries glabrous **Group 8** (*H. aureonitens*, *H. cymosum* subsp. *calvum*, *H. interjacens*, *H. kraussii*, *H. melanacme*, *H. polycladum*) 31
- 30b Ovaries hairy **Group 9** (*H. athrixiifolium*, *H. dregeanum*, *H. rugulosum*) 31
- 31a Heads heterogamous, few-flowered (up to 8 flowers), involucral bracts not radiating, receptacle smooth, ovaries glabrous **Group 2** (*H. callicomum*) 32
- 31b Characters not combined as above 32
- 32a Receptacle fimbriiferous, ovaries glabrous, corolla of bisexual flowers funnel-shaped **Group 8** (*H. aureonitens*, *H. cymosum* subsp. *calvum*, *H. interjacens*, *H. kraussii*, *H. melanacme*, *H. polycladum*) 33
- 32b Receptacle smooth or honeycombed or if fimbriiferous, either ovaries hairy or corolla of bisexual flowers campanulate above 33
- 33a Heads homogamous, containing less than 30 flowers, corolla funnel-shaped, ovaries usually hairy, occasionally hairs few or wanting on same plant **Group 12** (*H. caespitium*, *H. lineare*, *H. umbraculigerum*, *H. uninervium*) 34
- 33b Heads either heterogamous (female flowers sometimes very few or only 1) or if homogamous, either corollas campanulate above or ovaries glabrous, or both 34
- 34a At least inner involucral bracts clear yellow, minutely radiating but not squarrose, receptacle honeycombed **Group 22** (*H. chrysargyrum*, *H. psilolepis*, *H. splendidum*) 35
- 34b Involucral bracts straw-coloured, tawny or shades of golden-brown, sometimes with red or purple admixtures, rarely clear yellow and then either involucral bracts $\pm$ squarrose or receptacle fimbriiferous 35
- 35a Corollas of bisexual flowers funnel-shaped **Group 15** (*H. argyrosphaerum*, *H. candolleianum*, *H. cerastioides* var. *cerastioides*, *H. paronychioides*, *H. spiciforme*) 36
- 35b Corollas of bisexual flowers campanulate above 36
- 36a Ovaries glabrous, receptacle smooth or honeycombed, involucral bracts with conspicuous glabrous tips **Group 13** (*H. galpinii*, *H. obductum*, *H. truncatum*) 36

- 36b Ovaries hairy or if glabrous, then receptacle fimbriiferous or involucral bracts hairy all over backs with only extreme tips occasionally glabrous **Group 9** (*H. athrixiifolium*, *H. dregeanum*, *H. rugulosum*)

acutatum DC.

(= *H. galpinii* Schltr. & Moeser,
= *H. floccosum* Klatt,
= *H. eriophorum* P. Conrath)

Perennial herb, 0.45–0.60 m high. Leaves elliptic or ovate-elliptic to oblong-lanceolate, becoming smaller upwards, lower tapering into winged petiole, upper sessile, glandular-pubescent or lightly cobwebby to thickly tomentose. Heads oblong-campanulate, 5–7 mm long, in dense corymbose clusters, involucral bracts densely imbricate. *Flowers with bright yellow involucral bracts; July to June.* Grassland. *Codd & De Winter 3306.*

W S C N E

adenocarpum DC. subsp. adenocarpum

Decumbent or erect perennial herb, 40–450 mm tall. Radical leaves suborbicular to elliptic-oblong, 20–40 (–140) $\times$ 15–25 (–40) mm, mostly loosely grey-woolly or cobwebby; cauline leaves oblong to lanceolate, smaller. Heads campanulate, 15–20 mm long. *Flowers yellow often tipped red; involucral bracts white tipped rose, crimson or scarlet or entirely rose or crimson; January to September.* Grassland, often on moist slopes or in moist depressions. *Devenish 588.*

W S C N E

albilanatum Hilliard

Subshrub, up to 1 m high. Leaves 35–60 $\times$ 11–20 mm, smaller upwards, lanceolate, bases cordate-clasping, lower surface thickly silvery-grey appressed woolly and with long red glandular hairs, upper surface appressed woolly or wool wanting and surface merely glandular-setose. Heads depressed-globose, 12–13 mm long, several in an open corymbose panicle. *Flowers with yellow involucral bracts; January to July.* Rocky montane grassland and marginal to forest patches. *Galpin 12207.*

W S C N E

allioides Less.

Perennial herb, up to 0.65 m high. Radical leaves up to 600 $\times$ 20 mm, linear-lanceolate, petiolate, margins often undulate, upper surface thinly woolly, glabrescent, lower woolly felted; cauline leaves similar but sessile. Heads campanulate, many in compact, flat-topped corymb. *Flowers yellow; outer involucral bracts often purplish or reddish, inner pale yellow or sometimes whitish; October.* Open grassland. *Devenish 126.*

W S C N E

appendiculatum (L.f.) Less.

(= *Gnaphalium appendiculatum* L.f.)

Perennial herb, up to 0.55 m high. Radical leaves 80 $\times$ 20 mm, elliptic-oblong, both surfaces woolly; cauline leaves smaller, lanceolate-oblong to lanceolate. Heads campanulate, 7–14 mm long, many in corymbose clus-

ters arranged in a compact or open corymbose panicle. Involucral bracts often squarrose. *Flowers yellow; involucral bracts dull creamy white or yellowish often washed brown, purplish or crimson; August and November to March.* Grassland. Killick & Strey 2504.

W S C N E

argyrolepis MacOwan

Subshrub, up to 500 mm tall. Leaves linear or linear-lanceolate, 6–25 × 1–2(–3) mm, smaller and more distant upwards, margins ± revolute, upper surface glandular-pubescent and thickly greyish white cobwebby or woolly, lower more closely felted. Heads campanulate, 13–15 mm long, solitary at branch tips. *Flowers with involucral bracts glossy white, mostly palest to dark chestnut-brown above, rarely rose-pink; December to September.* Grassland, among outcropping rocks. Devenish 1317.

W S C N E

argyrosphaerum DC.

Prostrate or decumbent herb. Leaves 25 × 7 mm, spatulate to oblanceolate, both surfaces thinly grey-woolly. Heads subglobose, solitary at tips of branchlets. *Flowers yellow, tipped pink; involucral bracts silvery becoming increasingly pink-tinged inwards, fading at maturity; May to October and in January.* Hot, dry, sandy places, becomes weed. Meeuse 9333.

W S C N E

athrixiifolium (Kuntze) Moeser

(= *Gnaphalium athrixiifolium* O. Hoffm. ex Kuntze)

Perennial herb, up to 450 mm tall. Leaves 10–40 × 1–5 mm, linear, linear-lanceolate or oblong-lanceolate, base half-clasping, margins revolute, lower surface thinly white tomentose. Heads oblong-campanulate, in compact corymbose panicles terminating branches. *Flowers with opaque white involucral bracts; July to June.* Grassland or open woodland on sandy or shaly soils, will invade overgrazed or eroded areas e.g. roadsides. Killick & Strey 2483.

W S C N E

aureolum Hilliard

Subshrub, up to 1 m high. Leaves 50–90 × 15–38 mm, lanceolate or oblong-lanceolate, both surfaces glandular-setose, margins and midline often white-woolly as well. Heads depressed-globose, 12–13 mm long, several in an open corymbose panicle. *Flowers with involucral bracts bright golden-yellow inside, golden-brown outside; November to August.* Grassland and scrub, often on damp streamsides or other marshy or well-watered places. Scheepers 278.

W S C N E

aureonitens Sch. Bip.

(= *H. helodes* Hiern)

Perennial herb, up to 300 mm tall. Leaves oblong or oblong-spathulate, 20(–30) × 3(–6) mm, apex obtuse or subacute, both surfaces appressed-woolly. Heads cam-

panulate in compact corymbose clusters at branch tips. *Flowers with yellow involucral bracts, often washed pale brown; September to March.* Grassland. Germishuizen 3503.

W S C N E

aureum (Houtt.) Merr. var. **argenteum** Hilliard

Perennial herb, 200–400 mm tall. Radical leaves 75 × 15 mm, oblanceolate, both surfaces loosely silvery grey woolly; cauline leaves 50 × 10 mm, lanceolate, both surfaces loosely silvery-grey woolly. Heads depressed-globose, 15–18 mm long, solitary or up to 6 corymbosely arranged. *Flowers yellow; involucral bracts yellow; December to February.* Montane grassland. Devenish 1217.

W S C N E

aureum (Houtt.) Merr. var. **candidum** Hilliard

Perennial herb, 50–300 mm tall. Radical leaves 30–100 × 10–25 mm, narrowly or broadly elliptic-spathulate, glandular-setose and greyish woolly or glabrescent. Heads depressed-globose, usually solitary. *Flowers yellow; involucral bracts white; September.* Hillsides. Devenish 71.

W S C N E

aureum (Houtt.) Merr. var. **monocephalum** (DC.) Hilliard

(= *H. fulgidum* (L.f.) Willd. var. *monocephalum* DC.)

Perennial herb, 50–300 mm tall. Radical leaves 30–120 × 10–20 mm, narrowly or broadly elliptic-spathulate, greyish white woolly or wool confined to margins; cauline leaves 30(–50) × 5(–10) mm, glandular setose. Heads depressed-globose, 8–15 mm long, usually solitary. *Flowers yellow; involucral bracts yellow; June to December.* Open grassland. Codd & De Winter 3293.

W S C N E

caespititium (DC.) Harv.

(= *H. lineare* DC. var. *caespititium* DC.)

Prostrate, mat-forming perennial herb. Leaves 5–10 × 0.5 mm, linear, base broad, clasping, margins revolute, both surfaces enveloped in silvery 'tissue-paper-like' indumentum. Heads cylindric-turbinate, solitary to several clustered at branchlet tips. *Flowers yellow, often tipped pink; tips of involucral bracts opaque white or sometimes pale pink; August to December.* On bare or sparsely grassed areas, often on disturbed sites. Scheepers 1597.

W S C N E

callicomum Harv.

Perennial herb, up to 400 mm tall. Leaves closely woolly, 25 × 6 mm, spatulate, oblong-spathulate or oblong, half-clasping. Heads cylindric with 4–6 flowers, ovaries glabrous. *Flowers yellow; involucral bracts pale straw-coloured; February to November.* Grassland. Germishuizen 844.

W S C N E

calocephalum Klatt

Perennial herb, up to 450 mm tall. Radical leaves 100 × 10 mm, elliptic, petiolate, both surfaces harshly pubescent; cauline leaves linear-lanceolate, margins strongly revolute, harshly pubescent, distant. Heads subglobose, many in spreading flat-topped corymbose panicle. *Flowers yellow or pink; involucre bracts opaque white or entire head suffused pink; September to December.* Mountains. *Retief & Herman 33.*

W S C N E

candolleum H. Buek

(= *H. leptolepis* DC.)

Prostrate, decumbent or erect perennial herb, 150–450 mm tall. Leaves (4–)10–35 × (1.0–)1.5–8.0(–12.0) mm, linear, oblong-lanceolate, lanceolate, obovate or spatulate, both surfaces greyish woolly, often yellowish when young. Heads campanulate, many in tight globose clusters. *Flowers yellow, red-tipped; involucre bracts silvery white, inner often suffused or tipped pink or crimson; July to June.* Sandy or gravelly soils in grassland or open woodland, open sandy places, e.g. watercourses. *Van der Schijff 36.*

W S C N E

cephaloideum DC.

(= *H. adscendens* sensu Moeser non (Thunb.) Less.,

= *H. adscendens* var. *cephaloideum* (DC.) Moeser)

Perennial herb, up to 400 mm tall. Radical leaves rosetted, 20–50 × 10–20 mm, lanceolate-oblong or oblanceolate-oblong, both surfaces loosely grey-woolly; cauline leaves smaller, oblong-lanceolate to lanceolate. Heads campanulate, several in a compact subglobose cluster. *Flowers yellow; involucre bracts bright yellow or deep straw-coloured, outer often overlaid or tipped golden-brown or rarely, purple-brown; July to June.* Grassland. *Scheepers 927.*

W S C N E

cerastioides DC. var. cerastioides

(= *H. obvallatum* DC.,

= *H. cerastioides* DC. var. *gracile* Moeser)

Erect, decumbent or prostrate herb, up to 200 mm tall. Leaves 5–20 × 1–4 mm, linear, linear-lanceolate, oblanceolate or oblong, base half-clasping, both surfaces grey-woolly. Heads campanulate, solitary or few clustered at tips of short side branches. *Flowers yellow, tipped pink; involucre bracts white, sometimes tinged rose, outermost sometimes tinged pale golden-brown; July to June.* Open flats and slopes on sand, gritty quartzites or calcareous soils. *Vahrmeijer 1439.*

W S C N E

chionosphaerum DC.

(= *H. randii* S. Moore,

= *H. pondoense* Schltr.)

Prostrate, mat-forming perennial herb or subshrub. Leaves 10–100 × 1.5–3.0(–5.0) mm, linear or linear-lanceolate. Heads campanulate, 7–12(–15) mm long, solitary or up to 4 clustered at tips of stems. *Flowers yellow; involucre bracts glossy white, occasionally washed palest yellowish brown outside; September to*

January. Stony grassland, over rock sheets, or draped over low rock or earth cliffs and big boulders. *Acocks 20872.*

W S C N E

chrysargyrum Moeser

Perennial herb, up to 400 mm tall. Leaves 75(–90) × 5(–6) mm, narrowly lanceolate, apex long-acuminate, silvery, silky skin-like indumentum. Heads broadly campanulate in congested terminal corymbose panicles. *Flowers with inner involucre bracts yellow, outer palest golden-brown or straw-coloured; February to May and August to September.* Mountain grassland. *Scheepers 930.*

W S C N E

confertifolium Klatt

Prostrate and erect perennial herb, 50–400 mm tall. Radical leaves 10–40(–70) × 2–3(–5) mm, linear-lanceolate, both surfaces silvery white-felted; cauline leaves similar but shorter and closely imbricate. Heads campanulate, 12–15 mm long, mostly solitary. *Flowers with involucre bracts glossy white, very pale to dark chestnut-brown or reddish brown outside in upper half; January to September.* Short rocky grassland, rock sheets and other bare areas. *Devenish 537.*

W S C N E

cooperi Harv.

Biennial herb, up to 1.5 m high. Radical leaves rosetted in first year of growth, up to 150(–250) × 60 mm, elliptic, glandular or thinly woolly; cauline 65–130 × (15–)20–45 mm, smaller upwards, oblong-lanceolate to lanceolate; main stem leaves decurrent in long or short wings, both surfaces glandular-setose, margins often white-woolly as well. Heads depressed-globose, 10–12 mm long, in leafy corymbose panicles. *Flowers with glossy bright yellow involucre bracts; February to May.* Grassland, often in coarse herbage on or near forest margins. *Arnold 212.*

W S C N E

coriaceum Harv.

(= *Gnaphalium plantaginifolium* Kuntze,

= *H. plantaginifolium* O. Hoffm. ex Moeser)

Perennial herb, up to 0.75 m high. Leaves 270 × 25 mm, petiolate, diminishing upwards and sessile, elliptic, upper surface with thin skin-like indumentum, soon glabrous, lower white-felted or silky. Heads campanulate, many in small corymbose clusters, corymbosely arranged. *Flowers yellow; involucre bracts straw-coloured; July to March.* Grassland. *Codd 2200.*

W S C N E

cymosum (L.) D. Don subsp. calvum Hilliard

(= *H. infaustum* J.M. Wood & M.S. Evans var. *discolor* Moeser)

Subshrub, up to 1 m high. Leaves linear-oblong to elliptic-oblong, 8–15 × 2–4 mm, upper surface with thin silvery grey sericeous indumentum, lower surface closely white-woolly. Heads cylindric, with 4–7 flowers, many in compact cymes, corymbose-paniculately

arranged at branch tips. Pappus wanting. *Flowers yellow; involucre bracts bright canary-yellow; February.* Stony grassland or steep turf slopes. *Devenish 839.*

W S C N E

dasyllum Hilliard

(= *H. lanatum* Harv.)

Perennial herb, up to 400 mm tall. Leaves up to 130 × 50 mm, diminishing in size upwards, lower obovate to elliptic, contracted into broad, clasping petiole-like base, upper obovate to oblanceolate, thickly clothed in greyish white wool. Heads turbinate-campanulate, 9 mm long, many in small clusters corymbose-paniculately arranged. *Flowers with yellow involucre bracts; September to February.* Grassland. *Codd 6800.*

W S C N E

difficile Hilliard

Perennial herb, 0.75–1.50 m high. Leaves 50–70(–80) × 8–20(–26) mm, smaller upwards, oblong or oblong-lanceolate, shortly decurrent, both surfaces glandular-setose, margins and midvein below often white-woolly. Heads depressed-globose, 10–15 mm long, few to many in leafy corymbose panicle. *Flowers with bright yellow involucre bracts; February to June.* Marshes and along wet streambanks. *Codd 2887.*

W S C N E

dregeanum Sond. & Harv.

Matforming shrub. Leaves (4–)14 × (0.5–)2.0 mm, linear or linear-lanceolate, margins strongly revolute, base broad, upper surface thinly and loosely woolly, lower white-woolly. Heads campanulate, clustered at tips of branchlets. *Flowers with involucre bracts whitish, straw-coloured, tawny or sometimes reddish; October to April.* Dry sandy or stony grassland, or in dwarf shrub communities, becoming a weed along roadsides and in overgrazed places. *Van Wyk 735.*

W S C N E

ecklonis Sond.

(= *H. calocephalum* Schltr.,
= *H. scapiforme* Moeser)

Perennial herb, up to 500 mm tall. Radical leaves up to 200 × 20 mm, commonly less than 100 × 20 mm, oblong-lanceolate to elliptic-obovate, loosely woolly cobwebby, upper surface sometimes glabrescent; cauline leaves similar but narrower and smaller. Heads campanulate, 25–30 mm long, solitary. *Flowers with white to deep rosy pink involucre bracts; May.* Grassy slopes. *Beeton 12.*

W S C N E

edwardsii Wild

Subshrub, up to 1 m high. Radical leaves rosulate, oblong, 50–55 × 8–15 mm, thinly greyish white woolly on both surfaces; cauline leaves 40–75(–100) × 18–28 (–40) mm, oblong or ovate, both surfaces glandular-se-

tose, upper surface glabrescent or with wool confined to margins and midline. Heads depressed-globose, 14–17 mm long, several corymbosely arranged. *Flowers with involucre bracts pale yellow inside, light golden-brown outside; January to May and in September.* Shrub communities among rock outcrops or on mountainsides, often near margins of forest. *Hemm 584.*

W S C N E

epapposum Bolus

(= *H. flavum* Burtt Davy,
= *H. inerme* Moeser)

Decumbent and erect perennial herb, up to 0.6 m high. Leaves 22 × 4(–5) mm, lanceolate, appressed, base half-clasping, margins revolute, upper surface cobwebby, glabrescent, lower greyish white woolly. Heads narrowly campanulate, many in dense cymose clusters. Pappus wanting. *Flowers yellow; outer involucre bracts tipped pale brown, inner bright canary-yellow; February to April and August to September.* Along muddy streambanks and in marshes, often on tussocks. *Devenish 844.*

W S C N E

galpinii N.E. Br.

(= *H. galpinii* N.E. Br. var. *tenuis* Burtt Davy)

Dwarf shrub, up to 300 mm tall. Leaves 5–15 × 0.75–1.00(–2.00) mm, linear, base broad, clasping, both surfaces enveloped in thick silvery grey, closely woven indumentum. Heads campanulate, up to 10 in a tight globose cluster, heads free from each other. *Flowers with tawny or straw-coloured involucre bracts; August to February.* Forms mats spreading over rock outcrops and hanging from rocky cliffs. *Codd 6748.*

W S C N E

gerberifolium Sch. Bip. ex A. Rich.

(= *H. brunneum* Burtt Davy,
= *H. davyi* S. Moore)

Perennial herb, 100–450(–750) mm tall. Radical leaves 60–200 × 13–33 mm, elliptic, petiolate, stem leaves similar but soon sessile, getting smaller, upper surface with minute soft pubescence or persistently thinly greyish silky woolly, lower greyish silky woolly felted. Heads campanulate, many in congested globose terminal cluster. *Flowers yellow; involucre bracts pale golden-brown; August to January.* Rocky grassland. *Codd & De Winter 3137.*

W S C N E

glomeratum Klatt

Perennial herb, up to 450 mm tall. Leaves lanceolate, apex acute to very acute, closely imbricate, both surfaces enveloped in silky often 'stringy' indumentum. Heads cylindric, many in congested roundish, corymbose clusters, these in turn congested in flatish corymbose cyme. *Flowers yellow; outer involucre bracts brownish, inner tipped canary-yellow; March to May.* Open grassland. *Devenish 867.*

W S C N E

harveyanum Wild(= *H. subulifolium* Harv.)

Perennial herb, 0.30–0.75 m high. Radical leaves 100–300 × 5–10 mm, petiolate, linear-lanceolate, both surfaces scabrid, often cobwebby-woolly below; cauline leaves 40–170 × 1–5 mm, smaller upwards, linear-lanceolate or linear, margins strongly revolute, upper surface and midrib below scabrid. Heads campanulate, in congested corymbose clusters, arranged in corymbose panicle. *Flowers yellow; involucre bracts tawny; September to March.* Bushveld. *Huntley 1106.*

W S C N E

herbaceum (Andrews) Sweet(= *Xeranthemum herbaceum* Andrews,
= *H. squamosum* auctt. non (Jacq.) Thunb.)

Perennial herb, up to 400 mm tall. Radical leaves rosulate, elliptic or obovate, up to 50 × 20 mm, loosely cobwebby above, glabrescent, white-felted below; cauline leaves 10–20(–25) × 1–2(–5) mm, linear to linear-lanceolate, upper surface greyish white cobwebby, lower loosely felted. Heads campanulate, 18–20 mm long, solitary at tips of branches or sometimes in a few-headed corymb. *Flowers yellow; involucre bracts golden-brown, inner lemon-yellow sometimes washed brown outside; December to March.* Grassland, confined to mountains. *Stalmans 382.*

W S C N E

homilochrysium S. Moore

Erect or decumbent shrub, up to 450 mm tall. Leaves 25–50 × 10–35 mm, ovate or elliptic-ovate, abruptly contracted to broad, flat petiolar part, base auriculate, upper surface thinly woolly, lower thickly so. Heads campanulate, many in compact clusters corymbosely arranged. Involucral bracts glossy. *Flowers yellow; involucre bracts pale straw-yellow; July to September.* On cliff faces and edges. *Rauh & Schlieben 9751.*

W S C N E

hypoleucum Harv.(= *Gnaphalium subcordatum* Kuntze)

Erect or scandent half-shrub or climber. Leaves cordate-ovate, 80 × 50 mm, upper surface thinly cobwebby at first, later minutely glandular pubescent, lower white-felted; petiole winged, base clasping, auriculate. Heads campanulate, many in congested corymbose clusters, these in large, spreading corymbose panicles. *Flowers bright yellow; involucre bracts silvery; January to April.* Steep grassy mountainsides or forest margins. *Devenish 863.*

W S C N E

interjacens Hilliard

Perennial herb or shrub, up to 0.6 m high. Leaves 15–20 × 2.0–2.5 mm, linear-lanceolate, base broad, half-clasping, eared, margins revolute, upper surface cobwebby-woolly, lower more densely so. Heads campanulate, many in compact corymbose panicles. *Flowers with light straw-coloured involucre bracts; March.* Crevices in rock outcrops. *Hilliard & Burt 14353.*

W S C N E

junodii Moeser

Shrub, up to 500 mm tall. Leaves 12–22 × 1–3 mm, linear or linear-lanceolate, margins revolute, upper surface glandular-puberulous and thinly greyish white cobwebby, lower thickly white-woolly. Heads campanulate, 15 mm long, solitary at branch tips. *Flowers with outer involucre bracts rich glossy rose-pink, outermost with brown overcast, inner white; February to August.* Rock outcrops in grassland and on mountains. *Muller & Scheepers 141.*

W S C N E

kraussii Sch. Bip.(= *H. steetzii* (Vatke) O. Hoffm.,
= *Gnaphalium kraussii* (Sch. Bip.) Sch. Bip.)

Small shrub, up to 1 m high. Leaves 20 × 2 mm, sessile, linear, margins strongly revolute, lower surface white-felted. Heads cylindric in dense cymose clusters corymbose-paniculately arranged at branch tips. *Flowers pale yellow; involucre bracts pale lemon-yellow or straw-coloured; July to June.* Sandy grassland or open woodland. *Van der Schijff 5.*

W S C N E

lepidissimum S. Moore(= *H. lepidissimum* S. Moore var. *flavidum* Moeser,
= *H. gazense* S. Moore)

Small shrub, 0.1–0.6 m high. Leaves 7–30 × 3–15 mm, broadly elliptic, abruptly contracted to flat petiolar part, auriculate, margins crisped; woolly above, glabrescent to reveal long coarse shaggy hairs, woolly felted below. Heads campanulate, few to many in corymbose clusters, terminating branchlets. *Flowers yellow; involucre bracts white, creamy or pale straw-coloured; July to June.* Rocky places, particularly rocky mountain tops and cliff edges. *Codd 4203.*

W S C N E

lesliei Hilliard

Subshrub, up to 0.6 m high. Radical leaves up to 150 × 40 mm, oblong-lanceolate; cauline leaves 35–50 × (15–)20–40 mm, ovate or broadly lanceolate, base cordate-clasping, all leaves with both surfaces loosely greyish white woolly. Heads depressed-globose, 10–14 mm long, 2–several in leafy open corymbose panicle. *Flowers with involucre bracts yellow, outer overlaid palest brown outside; January to March.* On quartzites. *Richardson 1100.*

W S C N E

lineare DC.(= *H. seineri* Moeser)

Prostrate or decumbent perennial herb. Leaves 5–10(–13) × 0.75–1.00(–4.00) mm, linear or lingulate, margins revolute, both surfaces white-woolly. Heads cylindric, in small glomerules at branch tips. *Flowers yellow, sometimes tipped pink; involucre bracts opaque white, rarely buff or pinkish; July to November.* Bare places, often seasonally wet places, on sand, alluvium or limestone soils; colonizing streamsides, areas around pans and disturbed ground. *Sutton 146.*

W S C N E

mariepsopicum Hilliard

Perennial herb or shrub, 150–300 mm tall. Leaves 10–30 × 2–5 mm, becoming smaller and more distant upwards, oblong or lanceolate-oblong, both surfaces glandular-pubescent, sometimes also cobwebby below. Heads campanulate, 12 mm long, solitary. *Flowers with involucre bracts glossy white, all but innermost tipped brown, sometimes with a rosy cast; September to April.* Damp mountain grassland particularly among rock outcrops. *Codd 6202.*

W	S	C	N	E
---	---	---	---	---

melanacme DC.

(= *H. kuntzei* (Kuntze) Moeser,
= *H. pullulum* Burt Davy)

Perennial herb or shrub, up to 500 mm tall. Leaves 8–35 × 1–5 mm, lanceolate or linear-lanceolate, margins revolute, woolly or cobwebby above, white-woolly below. Heads cylindric or narrowly campanulate, many in cymose clusters arranged in a compact, sometimes lax, terminal corymbose panicle. *Flowers yellow; involucre bracts tawny or innermost yellowish; December to April.* Grassy mountainsides. *Devenish 573.*

W	S	C	N	E
---	---	---	---	---

miconiifolium DC.

Perennial herb, up to 0,6 m high. Radical leaves 300 × 45 mm, narrowly to broadly elliptic, petiolate, upper surface scabridulous or smooth, lower white-felted, sometimes glabrescent; cauline leaves similar but soon sessile, linear-lanceolate, margins strongly revolute. Heads campanulate, many in loose or compact, flat-topped corymbose panicle. *Flowers yellow; involucre bracts lemon-yellow, often washed light golden-brown; October to March.* Grassland. *Codd 2582.*

W	S	C	N	E
---	---	---	---	---

milleri Hilliard

Shrub, up to 1 m high. Leaves 20–25 × 6–12 mm, oblong or oblong-lanceolate, both surfaces greyish white woolly, persistent on sterile twigs, shed on flowering twigs to reveal glandular-setose surface. Heads 15 mm long, depressed-globose, solitary or a few at tips of lateral flowering twigs. *Flowers with light brown involucre bracts; October to November.* Coarse herbage on margins of forest patches. *Anderson A80.*

W	S	C	N	E
---	---	---	---	---

mimetes S. Moore

Small shrub, up to 0,6 m high. Leaves elliptic-ovate or subrotund, petiolate, thinly grey-tomentose, margins flat. Heads campanulate, many in corymbose clusters, arranged in corymbose panicles. Involucre bracts crisped. *Flowers with straw-coloured involucre bracts; March to November.* Rock outcrops and broken rocky cliffs. *Acoks 12865.*

W	S	C	N	E
---	---	---	---	---

mixtum (Kuntze) Moeser var. mixtum

(= *Gnaphalium mixtum* Kuntze)

Perennial herb, up to 450 mm tall. Radical leaves rosetted, 40–100(–190) × 10–20(–40) mm, elliptic, elliptic-lanceolate or oblanceolate, both surfaces thinly grey-woolly; cauline leaves much smaller, lanceolate to linear-lanceolate. Heads campanulate, 6,5–9,0 mm long, several in a congested or open corymbose panicle. *Flowers yellow; involucre bracts bright yellow; July to June.* Grassland. *Buitendag 1100.*

W	S	C	N	E
---	---	---	---	---

mixtum (Kuntze) Moeser var. grandiceps Hilliard

Perennial herb, up to 450 mm tall. Leaves the same as in var. *mixtum*. Heads 12–15 mm long. *Flowers yellow; involucre bracts bright yellow; November to March and in July.* Grassy mountainsides. *Muller 2018.*

W	S	C	N	E
---	---	---	---	---

molestum Hilliard

Perennial herb, up to 1 m high. Leaves 65–100 × 18–32 mm, oblong or oblong-ovate, uppermost ovate-lanceolate, shortly decurrent; both surfaces glandular setose, margins and midline sometimes thinly white-woolly. Heads depressed-globose, 11–14 mm long, many in leafy corymbose panicle. *Flowers with bright yellow involucre bracts; November to June.* Moist ground in rough grassland or at margins of scrub or forest patches. *Hilliard & Burt 14162.*

W	S	C	N	E
---	---	---	---	---

monticola Hilliard

Perennial herb, up to 300 mm tall. Radical leaves up to 90 × 15 mm, narrowly to broadly lanceolate, upper surface glandular-pubescent and cobwebby, lower greyish white woolly; cauline similar but smaller. Heads campanulate, 15–20 mm long, solitary or more usually in a few- to several-headed corymb. *Flowers with involucre bracts white, inner tinged pink or crimson at base inside, rarely outer bracts with brownish pink overcast; November to March.* Stony grass slopes. *Codd 8312.*

W	S	C	N	E
---	---	---	---	---

mundtii Harv.

Perennial herb, up to 1,5 m high. Radical leaves up to 600 mm long, half of this petiolate, elliptic, 60 mm broad, upper surface glabrous, often rugose, lower white-felted; cauline leaves oblong-lanceolate to linear-lanceolate, base decurrent in long narrow stem wings. Heads campanulate, many in cymose clusters arranged in large, much-branched corymbose panicle. *Flowers yellowish; involucre bracts opaque creamy white; December to May.* Marshy places, often along streamsides or in seepage. *Van der Schijff 4616.*

W	S	C	N	E
---	---	---	---	---

mutabile Hilliard

Perennial herb, up to 1 m high. Leaves 25–75 × 4–12 mm, smaller upwards, oblong or oblong-lanceolate,

both surfaces glandular-pubescent, sometimes thinly to thickly greyish white woolly. Heads depressed-globose, 12–14 mm long, solitary at tips of long leafy branches forming a corymbose panicle. *Flowers with yellow involucre bracts, outer light brown outside; November to June*. Rocky sites in woodland or grassland near forest patches, rarely marshy places near rocks. *Van der Schijff 2655*.

W S C N E

nudifolium (L.) Less.

(= *Gnaphalium nudifolium* L.,
= *H. quinquenerve* (Thunb.) Less.,
= *H. leiopodium* DC.)

Perennial herb, up to 1,5 m high. Radical leaves up to 600 × 130 mm, linear-lanceolate, elliptic to ovate, petiolate, margins sometimes undulate, upper surface scabrid, lower scabrid, cobwebby or thinly to thickly white-woolly; cauline leaves similar, smaller, sessile. Heads narrowly campanulate, many in large corymbose panicle. *Flowers with involucre bracts pale or lemon-yellow, outer sometimes palest brown; July to June*. Grassland. *Codd & De Winter 4936*.

W S C N E

obductum Bolus

(= *H. obductum* Bolus var. *laxior* Bolus)

Prostrate or erect shrub, up to 0,6 m high. Leaves imbricate, 5–20 × 1–2(–3) mm, linear, mucronate, margins revolute, both surfaces enveloped in silvery tissue-paper-like indumentum. Heads campanulate, solitary or up to 20 in compact corymbose clusters. *Flowers with tawny involucre bracts; July to June*. Rocky places. *Codd 7602*.

W S C N E

odoratissimum (L.) Sweet

(= *Gnaphalium odoratissimum* L.)

Decumbent and erect perennial herb, up to 1,5 m high. Leaves broadest above middle, bases decurrent in narrow or broad stem wings; greyish white woolly on lower surfaces, aromatic. Heads in dense or loose, flattened or rounded, terminal cymose clusters. *Flowers yellow; outer involucre bracts pale brown, inner bright or pale canary-yellow; July to June*. On grassy or rocky slopes, colonize bare areas e.g. roadsides. *Germishuizen 3264*.

W S C N E

opacum Klatt

Perennial herb, up to 400 mm tall. Leaves 150 × 12 mm, lanceolate, markedly discolorous, white-felted below; cauline leaves few, distant, smaller. Heads campanulate, many in a corymbose panicle. *Flowers yellow; involucre bracts snow white; November to January*. On grassy mountainsides. *Devenish 374*.

W S C N E

oreophilum Klatt

Perennial herb, up to 300 mm tall. Leaves 80 × 15 mm, smaller upwards, oblanceolate to lanceolate, both sur-

faces grey silky-woolly. Heads turbinate-campanulate, 7 mm, several to many in compact corymbose panicle; involucre bracts loosely imbricate. *Flowers with yellow involucre bracts; August to February*. Grassland and invades overgrazed and eroded areas. *Codd & De Winter 3131*.

W S C N E

oxyphyllum DC.

(= *H. amoenum* Moeser,
= *H. undatum* Less.)

Perennial herb, up to 0,6 m high. Radical leaves up to 350 × 40 mm, elliptic to ovate, petiolate, margins often undulate, upper surface scabridulous, lower white-felted; cauline leaves similar but soon sessile. Heads campanulate, many in compact, flat-topped corymbose panicle. *Flowers white or pink; outer involucre bracts purplish or reddish, inner tipped white or creamy; July to March*. Grassland. *Stalmans 655*.

W S C N E

pallidum DC.

(= *H. undatum* Less. var. *pallidum* (DC.) Harv.,
= *H. undatum* Less. var. *agrostophilum* (Klatt) Moeser)

Perennial herb, up to 0,65 m high. Radical leaves up to 400 × 120 mm, broadly to narrowly elliptic, contracted to long, flat petiole-like base, margins often undulate, upper surface harshly pubescent, lower thinly greyish white-felted; cauline leaves similar, sessile, cordate-clasping. Heads campanulate, many in compact flat-topped corymb. *Flowers white to pale yellow; involucre bracts creamy to pale yellow, sometimes washed palest brown; October to January and May to July*. Grassland. *Raal 1014*.

W S C N E

panduratum O. Hoffm. var. **transvaalense** Moeser

Diffuse, loosely branched subshrub, 1–2 m high. Leaves ovate-rhomboid to elliptic, thinly grey-woolly above, densely so below, petiolate, minutely eared at base. Heads subglobose, many in loose terminal corymbose panicles. *Flowers yellow; involucre bracts opaque white; August to October and in January*. Forest margins, rocky bushy places. *Scheepers 1172*.

W S C N E

paronychioides DC.

Matforming, prostrate subshrub. Leaves 3–8 × 0,50 (–1,75) mm, linear, imbricate, margins revolute, both surfaces silky grey hairy. Heads campanulate, solitary at tips of short erect branchlets. *Flowers yellow, tipped pink; outer involucre bracts white, inner rose-red, tips white; May to November*. Dry sandy open places. *Hanekom 1538*.

W S C N E

pilosellum (L.f.) Less.

(= *Gnaphalium pilosellum* L.f.,
= *H. pedunculare* (L.) DC. var. *pilosellum* (L.f.) Harv.)

Perennial herb, up to 450 mm tall. Leaves radical, 150(–230) × 40(–60) mm, elliptic, ovate or subrotund, upper surface harshly pubescent with long coarse mul-

ticellular hairs, lower white-felted. Heads campanulate, many in compact corymbose clusters in rounded or flat-topped cyme. *Flowers bright yellow; involucre bracts pale brown; July to June.* Grassland. *Germishuizen 3505.*

W S C N E

platypteron DC.

(= *Cassinia alba* O. Hoffm.,
= *Gnaphalium amplum* Kuntze)

Perennial herb, up to 1 m high. Leaves 250 × 80 mm, broadly elliptic to lanceolate, base broad, decurrent in long stem wings, upper surface thinly and harshly pubescent, lower more markedly so, particularly on nerves. Heads campanulate, in large corymbose panicle. *Flowers yellow; inner involucre bracts silvery white, sometimes tinged palest brown; January to May and in August.* Forest margins or damp grassy mountainsides. *Codd 7890.*

W S C N E

polycladum Klatt

Herb, up to 1 m high. Leaves 7–22 × 1(–2) mm, linear-lanceolate, base broad, somewhat eared, margins revolute, upper surface loosely white-woolly, often glabrescent; lower persistently so. Heads cylindrical, many in compact corymbose panicles. *Flowers with dirty white involucre bracts; January to August.* Rocky outcrops. *Hemm 116.*

W S C N E

psilolepis Harv.

Perennial herb, up to 400 mm tall. Leaves 30 × 4 mm, but often only 15 × 2 mm, linear or linear-lanceolate, apex acute, both surfaces greyish white woolly. Heads campanulate, 5 mm long, many in congested terminal rounded corymbose clusters. *Flowers with involucre bracts yellow, outer tipped pale golden-brown; November to January.* Grassland. *Galpin 9811.*

W S C N E

reflexum N.E. Br.

Small shrub, 0.3–0.6 m high. Leaves 5–11 × 0.75–1.50 mm, linear or linear-lanceolate, margins strongly revolute, glandular-pubescent and sometimes thinly greyish white woolly above, densely white woolly below, reflexed. Heads campanulate, 10–12 mm long, solitary. *Flowers with involucre bracts glossy white, outer tinged light brown often with a rosy cast; January to August.* Rock outcrops. *Codd 6430.*

W S C N E

rudolfii Hilliard

Shrub, up to 1 m high. Leaves 10–40 × 3–30 mm, rhomboid-elliptic or ovate, petiolate, upper surface thinly and persistently woolly, lower white tomentose, margins flat. Heads campanulate, many in cymose-corymbose clusters. Involucre bracts smooth. *Flowers yellow; tips of involucre bracts opaque white; Febru-*

ary to June and September to November. Among rocks on mountain tops. *Meeuse 9987.*

W S C N E

rugulosum Less.

Perennial herb, up to 300 mm tall. Leaves 15–25 × 2–5 mm, lower oblong-lanceolate, acute, upper lanceolate, acuminate, margins subrevolute, upper surface thinly cobwebby-felted, rugose, lower white-felted. Heads campanulate, in compact corymbose panicles. *Flowers with involucre bracts creamy, often purplish or pink initially; October to May.* Poor sandy or stony grassland, readily invades overgrazed areas and roadsides. *Coetsee 587.*

W S C N E

setosum Harv.

Perennial herb or shrub, up to 1 m high. Leaves 20–50 × 10–20 mm, smaller upwards, oblong-ovate, becoming elliptic-lanceolate to lanceolate on inflorescence branches; both surfaces and margins glandular-setose, margins and midline above sometimes woolly. Heads 10–12(–14) mm long, depressed-globose, solitary at tips of long leafy branchlets corymbosely arranged. *Flowers with yellow involucre bracts; July to June.* Mountain grassland. *Jacobsen 2400.*

W S C N E

spiciforme DC.

Woody, perennial herb, 400 mm tall. Leaves persistently grey-woolly. Heads solitary at tips of very dwarf lateral shoots, producing very floriferous, raceme-like twigs. Heads 7–8 mm long, containing 20–30 flowers. *Flowers yellow, tipped pink; involucre bracts white with subopaque tips; December.* Deep loose sand. *Leistner 2086.*

W S C N E

spiralepis Hilliard & B.L. Burt

(= *H. involucreatum* Klatt,
= *Leontonyx squarrosus* (L.) DC.,
= *L. tomentosus* Cass.)

Erect or decumbent and then erect herb, up to 300 mm tall. Radical leaves rosetted, 70 × 15 mm, oblong-spathulate to linear-oblong, grey-woolly. Heads narrowly campanulate, congested in small terminal glomerules, glomerules in corymbose panicles. *Flowers with involucre bracts whitish, creamy, pink or red-purple; January to June.* Grassland. *Meeuse 10076.*

W S C N E

splendidum (Thunb.) Less.

(= *Gnaphalium splendidum* Thunb.,
= *H. strictum* (Lam.) Druce)

Virgate shrub, up to 1.5 m high. Leaves 10–30(–40) × 1–2(–6) mm, linear, linear-oblong or linear-lanceolate, acute or subacute, margins revolute, upper surface thickly or thinly greyish white woolly or glabrous, lower greyish white woolly. Heads hemispherical, many in congested or open corymbose panicles. *Flow-*

ers yellow; involucre bracts bright canary-yellow, rarely orange; July to April. Rocky places, on forest margins, in stream gullies and on mountain tops. Schlieben & Strey 7967.

W S C N E

spodiophyllum Hilliard & B.L. Burt

Matforming, decumbent and erect perennial herb or shrublet, 100–250 mm tall. Radical leaves 10–100 × 1–2 mm, linear, flat or channelled, both surfaces closely grey silky-woolly; cauline leaves 20 mm long, linear-lanceolate to lanceolate, grey silky-woolly. Heads cylindric, many in a tightly congested corymbose cluster. *Flowers with outer involucre bracts tipped brown, inner bright yellow; January.* On rock outcrops and rock sheets in grassland. Devenish 538.

W S C N E

subglomeratum Less.

(= *H. subglomeratum* Less. var. *lingulatum* Harv.)

Perennial herb, 0.08–0.60 m high. Leaves in a basal rosette and cauline, lingulate, oblong or elliptic, base clasping, both surfaces silvery silky-felted. Heads narrowly cylindric, many in small corymbose clusters congested in flattened spreading cymose corymb. *Flowers yellow; outer involucre bracts brown or straw-coloured, inner tipped bright canary-yellow; January to June.* Scattered in stony grassland or form small mats over rock sheets. Galpin M735.

W S C N E

subluteum Burt Davy

Perennial herb, 200(–350) mm tall. Radical leaves rosetted, 28–55 × 17–22 mm, elliptic or ovate, upper surface with long coarse patent hairs, lower greyish white-felted; cauline diminishing upwards, lanceolate-oblong to lanceolate. Heads campanulate, several in a subglobose compound head. *Flowers yellow; involucre bracts bright yellow, outer tipped golden-brown; September to March.* Grassy marshy places, often along streams or seepage lines. Codd & De Winter 3210.

W S C N E

summo-montanum I. Verd.

(= *H. andersoniense* Burt Davy)

Shrub, up to 1 m high. Leaves 20–50 × 10–25 mm, elliptic, upper surface glandular-pubescent, woolly, greyish white woolly below. Heads campanulate, 25 mm long, solitary at tips of branchlets in axils of upper leaves. *Flowers with outer involucre bracts pale brown, inner rosy fading to white; October to November and March to June.* Among rocks at summit of mountain. Codd & De Winter 3298.

W S C N E

swynnertonii S. Moore

Matforming, perennial herb or shrublet, 100–150 mm tall. Leaves 80 × 10 mm, lanceolate-elliptic, enveloped in loosely woven, grey, stringy-woolly felt. Heads broadly campanulate, 13–18 mm long, solitary at

branch tips. *Flowers yellow; involucre bracts glossy white with faint yellowish or brownish overcast; September to November.* Stony mountainsides. Van der Schijff 6489.

W S C N E

thapsus (Kuntze) Moeser

(= *Gnaphalium thapsus* Kuntze,
= *H. lanatmarginatum* Markötter)

Perennial herb, up to 0.6 m high. Leaves 120 × 30 mm, elliptic or elliptic-spathulate, both surfaces thinly to thickly greyish white woolly, sometimes glabrescent and wool then clinging to margins and main veins. Heads campanulate or broadly cylindric, in tight clusters, these in an open corymbose panicle. *Flowers yellow; involucre bracts straw-coloured or pale brown; December to May.* Grassland. Hilliard & Burt 14286.

W S C N E

transmontanum Hilliard

Subshrub, up to 1.5 m high. Leaves 50–80 × 20–28 mm, smaller upwards, lanceolate, both surfaces and margins glandular-setose, midline and margins sometimes thinly cobwebby. Heads 17–20 mm long, broadly campanulate, several in an open corymbose-panicle. *Flowers with straw-coloured to light brown involucre bracts; December and March to April.* Montane grassland. Codd 7891.

W S C N E

truncatum Burt Davy

Matforming perennial herb, up to 150 mm tall. Leaves rosetted initially, oblanceolate to lanceolate, 50 × 5(–7) mm, both surfaces enveloped in silvery silky indumentum. Heads cylindric, many in dense, flat-topped clusters, solitary at branch tips. *Flowers with outer involucre bracts golden-brown above; January to May.* Marshy grassland or sedge mats over rock flushes. Muller & Scheepers 160.

W S C N E

umbraculigerum Less.

(= *H. coactum* M.D. Hend.)

Perennial herb, up to 1 m high. Leaves 20–80 × 3–25 mm, variable in shape, upper surface cobwebby or thinly to thickly greyish white-woolly, lower surface thickly greyish white woolly, sometimes wanting. Heads cylindric, crowded together to form flattened umbrella-like disc. *Flowers yellow; involucre bracts canary-yellow, outer often golden-brown; January to August.* Rough grassland or scrub, often on forest margins or in damp gullies and along streams. Muller & Scheepers 86.

W S C N E

uninervium Burt Davy

Subshrub, 0.3–1.0 m high. Leaves 5–20 × 3–8 mm, elliptic, black-mucronate, petiole very short, both surfaces grey-felted with yellowish tinge. Heads turbinate-campanulate, in small or large corymbose-panicles.

Flowers with inner involucre bracts pale lemon-yellow, outer pale brown or reddish; August to December and March to May. Rocky sites. Codd 10410.

W S C N E

wilmsii Moeser

Subshrub, up to 0,8 m high. Leaves 12–30 × 3–9 mm, smaller and distant upwards, narrowly panduriform to oblong becoming lanceolate-acuminate upwards, upper surface glandular-pubescent and greyish white cobwebby, lower white-woolly or cobwebby. Heads campanulate, 13–20 mm long, solitary at tips of branches. Flowers yellow; outer involucre bracts pale or rich chestnut-brown, sometimes with a rosy overcast, inner white, sometimes tinged rose; July to June. Rough rocky grassland and forest margin herbage. Codd 7854.

W S C N E

zeyheri Less.

Small shrub, 0,15–1,00 m high. Leaves 6–23 × 2–9 mm, linear-oblong, oblong or obovate, bases broad and subcordate-clasping, petiole-like in larger obovate leaves, margins undulate or crisped. Heads cylindric, 4–5 mm long with 5 flowers. Flowers with involucre bracts opaque white or inner sometimes rosy; September to May. Sandy and stony soils. Acocks 12420.

W S C N E

Hertia Less. (s. Afr.: 5 spp.)

9377000

Merxmüller. 1967. F.S.W.A. 139: 99–100.

ciliata (Harv.) Kuntze

Succulent subshrub, up to 0,6 m high. Branches with grey-brown bark. Leaves obovate to elliptic, 5–10 mm broad, apex shallowly dentate. Corolla of female marginal flowers small (± 1,5 mm long). Marginal achenes glabrous or weakly hairy. Flowers yellow. In grassland on limestone. Van Wyk 142.

W S C N E

pallens (DC.) Kuntze

Shrub, up to 1 m high. Branches with light, papery bark. Leaves linear-oblong, 1,5–3,0(–6,0) mm broad, margin with few minute teeth. Corolla of female marginal flowers shortly ligulate (± 10 mm long). Marginal achenes silky-villous. Flowers yellow; August to October. Calcareous soil, on hillsides, rocky ridges, dry riverbeds, flats, along roadsides. Can become a weed. Van Wyk 2909.

W S C N E

Hirpicium Cass. (s. Afr.: 8 spp.)

9435000

Roessler. 1959. Mitt. bot. StSamml., Münch. 3: 333–363.
Hilliard. 1977. Compositae in Natal: 545–547.

armerioides (DC.) Roessler

(= *Gazania armerioides* DC.,
= *H. armerioides* (DC.) Roessler subsp. *rudatisii* Roessler)

Perennial herb, up to 150 mm tall. Leaves in a basal rosette, linear, oblanceolate or pinnatifid, lower surface white-felted. Peduncles without any leaves, ciliate with long white hairs. Involucre bracts also with long white hairs. Flowers with rays white above, purple band below, disc yellow; November. On poor stony soils, rock sheets and bare areas. Turner 337.

W S C N E

bechuanense (S. Moore) Roessler

(= *Berkheyopsis bechuanensis* S. Moore)

Subshrub, up to 400 mm tall. Leaves oblong to linear-oblong, dentate or pinnatifid, white-felted beneath; lower part of leaf margin with long white cilia. Margins of involucre bracts ciliate with short, stiff hairs. Flowers yellow; July to June. Grassland on sandy soil, often on disturbed places. Leistner 3200.

W S C N E

linearifolium (Bolus) Roessler

(= *Gazania linearifolia* Bolus,
= *Berkheyopsis linearifolia* (Bolus) Burt Davy)

Perennial herb, 100–200 mm tall. Leaves in a basal rosette, linear, ciliate in lower half, setulose but not white-felted below. Peduncles with a few leaves. Involucre bracts ciliate. Flowers with pale yellow rays; October to November. Mountain grassland. Codd 8031.

W S C N E

Hypericophyllum Steetz (s. Afr.: 1 sp.)

9262000

Pope. 1975. Kirkia 10,1: 104–111.

elatum (O. Hoffm.) N.E. Br.

(= *Jaumea elata* O. Hoffm.)

Perennial herb, up to 1,8 m high. Leaves elliptic or oblanceolate, sessile or subsessile. Heads 3–12, terminal on branches. Pappus of 15–20 setae, uncinat and fimbriately winged. Flowers reddish orange; February. Mixed deciduous woodland. Codd 6892.

W S C N E

Hypochaeris L. (s. Afr.: 4 spp.)

9572000

Hilliard. 1977. Compositae in Natal: 599–603.

brasiliensis (Less.) Griseb.*

Perennial herb, up to 1 m high. Leaves mostly radical, subentire to sinuate to pinnatifid, base narrowed, broadly winged, petiole-like, hispid mainly on nerves and margins; cauline leaves similar but broad-based, half-clasping. Pappus uniseriate, all setae long and plumose. Achenes 5-ribbed. Flowers yellow; December. Weed in old fields and along roadsides. Native to South America. Mogg 37149.

W S C N E

microcephala (Sch. Bip.) Cabrera var. **albiflora** (Kuntze) Cabrera*
(= *H. brasiliensis* (Less.) Griseb. var. *albiflora* Kuntze)

Perennial herb, up to 300 mm tall. Leaves in a rosette, oblong in outline, narrowed to broad, winged, petiole-like base, runcinate-pinnatifid; cauline leaves similar but sessile. Pappus uniseriate, all setae long and plumose. Achenes 5-ribbed. *Flowers white; November*. Weed in disturbed places. Native to South America. *Behr 638*.

W S C N E

radicata L.*

Acaulescent perennial herb. Leaves in a basal rosette, oblanceolate, narrowed to clasping base, sinuate-toothed to sinuate-pinnatifid, hispid to glabrous. Pappus biseriate, inner setae long, plumose, outer much shorter, scabrid. Corollas longer than involucre. Achenes multi-ribbed, beaked. *Flowers yellow; July to June*. Weed along roadsides and other disturbed areas. Native to Europe and Asia. *Codd 6437*.

W S C N E

Ifloga Cass. (s. Afr.: 4 spp.)

8967000

Hilliard. 1981. Bot. J. Linn. Soc. 82: 293–312.

glomerata (Harv.) Schltr.

(= *I. aristulata* Thell.,
= *Trichogyne glomerata* Harv.)

Prostrate, decumbent or erect annual herb. Leaves linear-filiform or lanceolate, often twisted, lower surface with thin tissue-paper-like indumentum, upper thinly white tomentose. Heads many, crowded in leafy glomerules. *Flowers pale golden-brown or straw-coloured, sometimes tinged red; March and July*. Sandy and gravelly places, roadsides and weed of cultivation. *Burt Davy 14172*.

W S C N E

Inezia E. Phillips (s. Afr.: 2 spp.)

9337010

Phillips. 1932. Kew Bull. 6: 297.
Brusse. 1989. Bothalia 19,1: 27–29.

integrifolia (Klatt) E. Phillips

(= *Lidbeckia integrifolia* Klatt)

Perennial herb, 0.3–0.6 m high. Leaves sessile, entire, narrowly ovate, pubescent. Heads solitary; ray flowers scarcely longer than involucre bracts. *Flowers yellow; November to March*. Mountain grassland. *Codd 8132*.

W S C N E

speciosa Brusse

Perennial herb, up to 450 mm tall. Leaves sessile, entire to pinnate, densely silvery hirsute. Heads solitary on long, sparsely leafy peduncles. Rays much longer than involucre bracts. *Flowers with white rays, disc yellow; November to January*. Grassy hillsides. *J.B.G. 6332*.

W S C N E

Inula L. (s. Afr.: 3 spp.)

9061000

Oliver & Hiern. 1877. F.T.A. 3: 357–359.
Klatt. 1896. Bull. Herb. Boissier 4: 474–475.
Burt Davy. 1935. Kew Bull.: 570.

glomerata Oliv. & Hiern

Robust herb, up to 1.5 m high. Leaves oval or ovate, denticulate; upper subauriculate, sessile; radical ones big, petiolate, tomentose beneath. Pappus uniseriate. Heads in interrupted subglobose clusters. *Flowers yellow; February to October*. Grassy mountainsides. *Stalmans 1306*.

W S C N E

paniculata (Klatt) Burt Davy

(= *Monactinocephalus paniculatus* Klatt)

Herb, up to 1.5 m high, thickly glandular with brown hairs. Basal leaves elliptic, unequally auriculate, dentate; becoming smaller upwards, sessile, lanceolate. *Flowers yellow; October to January*. Grassland in marshy areas. *Stalmans 793*.

W S C N E

Inulanthera Källersjö (s. Afr.: 7 spp.) 9326010

Hilliard. 1977. Compositae in Natal: 333–343.
Källersjö. 1985. Nord. J. Bot. 5: 539–540.

calva (Hutch.) Källersjö

(= *Athanasia calva* Hutch.)

Shrub, up to 1.5 m high. Leaves sessile, oblong or oblanceolate, with a pair of basal, linear, stipule-like lobes, margins entire to sharply serrate. Achenes without superficial glands between ribs, ribs $\pm$ scabrid; pappus of minute teeth—upward prolongations of ribs. *Flowers bright yellow; September to November* and February to April. Forest margin scrub or grassland. *Scheepers 935*.

W S C N E

Kleinia Mill. (s. Afr.: 5 spp.)

9411050

Harvey. 1865. F.C. 3: 315–316.
Phillips. 1921. Flower. Pl. Afr. 1: t. 28.
Hilliard. 1977. Compositae in Natal: 500–501.
Jeffrey. 1986. Kew Bull. 41,4: 935–936.

fulgens Hook. f.

(= *Senecio fulgens* (Hook. f.) G. Nicholson,
= *Notoniopsis fulgens* (Hook. f.) B. Nord.)

Succulent perennial herb, up to 0.6 m high. Leaves oblanceolate, sessile; margins entire to coarsely and irregularly toothed in expanded part; glabrous. Heads discoid; involucre bracts $\pm$ 8, 15 mm long. Achenes glabrous. *Flowers scarlet, sometimes orange-scarlet or almost crimson; April to September*. Valley woodland and scrub, mainly on rocky ledges of cliffs and steep rocky slopes. *Munro sub PRE 44735*.

W S C N E

galpinii Hook. f.

(= *Senecio galpinii* (Hook. f.) Hook. f.,
= *Notoniopsis galpinii* (Hook. f.) B. Nord.)

Succulent perennial herb. Leaves narrowly oblanceolate to spatulate, sessile, glabrous; margins entire. Heads discoid. Achenes glabrous. *Flowers pale orange-red; October and January to May*. Cliffs. *Codd sub PRE 44777*.

W S C N E

longiflora DC.

(= *Senecio longiflorus* (DC.) Sch. Bip.)

Glabrous succulent shrub, up to 2 m high. Branches angular. Leaves minute, linear-subulate. Heads discoid, on very short pedicels at ends of branches and axillary. Achenes hispidulous between ribs. *Flowers white to cream; May to October*. Among rocks in grassland or open woodland. *Zambatis 1200*.

W S C N E

stapeliiformis (E. Phillips) Stapf

(= *Senecio stapeliiformis* E. Phillips)

Succulent herb, up to 250 mm tall. Stems thick and fleshy, 4–7-angled, angles compressed and toothed, each tooth tipped with awl-like leaf 2–5 mm long, withering and becoming hardened. Heads discoid, solitary. Achenes glabrous. *Flowers scarlet-red; August to January*. Grassland and bushveld—often in shade of trees. *Acocks 23356*.

W S C N E

Lactuca L. (s. Afr.: 6 spp.)

9596000

Hilliard. 1977. *Compositae in Natal*: 629–633.
Pope. 1992. *F.Z.* 6,1: 196–209.

inermis Forssk.

(= *L. capensis* Thunb.,
= *L. pallidocoerulea* Dinter)

Perennial herb, up to 1 m high. Cauline leaves auriculate. Involucre ± 15 mm long. Achenes 5,5 mm broad with median rib on each face and marginal wings; beak shorter than body of achene. *Flowers white or bluish, very rarely yellow; July to April*. Short grassland and as a pioneer in disturbed areas. *Stalmans 1124*.

W S C N E

serriola L.*

(= *L. scariola* L.,
= *L. virosa* auct. non L.)

Annual or biennial herb, up to 2 m high. Achenes up to 1 mm broad, each face closely and equally ribbed; beak longer than body of achene. Involucre up to 12 mm long. *Flowers pale yellow; October to January*. Weed along roadsides and in waste places on outskirts of towns. Native to Europe and Asia. *Van Wyk 497*.

W S C N E

Laggera Sch. Bip. ex Koch (s. Afr.:

2 spp.)

8940000

Wild. 1969. *Kirkia* 7,1: 125–132.
Anderberg. 1991. *Pl. Syst. Evol.* 176: 161.

crispata (Vahl) Hepper & Wood

(= *Blumea alata* (D. Don) DC.,
= *L. alata* (D. Don) Sch. Bip. ex Oliv.)

Herb, up to 2 m high. Stems winged. Leaves glandular-puberulous, oblong, elliptic-oblong, narrowly obovate or obovate, margins coarsely serrate or serrulate. Peduncles arching over. *Flowers pinkish purple; March to September*. Woodland and savanna, also a weed of cultivation or waste places. *Hemm 173*.

W S C N E

decurrens (Vahl) Hepper & Wood

(= *L. gariepina* (DC.) Randeria,
= *Blumea gariepina* DC.)

Silky villous herb, up to 2 m high. Stems winged. Leaves entire. Inflorescence a narrow terminal, dense panicle. Peduncle straight, heads held erect. *Flowers whitish, yellowish or purplish; July to June*. Grasslands and savannas; weed of cultivation, pioneer of metalliferous soils. *Codd 4327*.

W S C N E

Lasiopogon Cass. (s. Afr.: 8 spp.)

8987000

Hilliard. 1983. *F.S.A.* 33,7,2: 5.

muscoides (Desf.) DC.

(= *Gnaphalium muscoides* Desf.)

Mat-forming annual herb. Leaves thin, loosely woolly. Pappus bristles cohering by a few patent cilia at base; delicately plumose from base, tipped with a pair of pointed cells. Female flowers at least 6 times as many as bisexual flowers. *Flowers: involucre bracts pale straw-coloured; disc flowers whitish, tips sometimes reddish; July*. Bare sandy or gravelly places e.g. watercourses, edges of pans. *Brueckner 489*.

W S C N E

Lasiospermum Lag. (s. Afr.: 4 spp.)

9321000

Harvey. 1865. *F.C.* 3: 153–154.
Druce. 1917. *Rep. botl. Soc. Exch. Club Br. Isl.* 1916: 631.

bipinnatum (Thunb.) Druce

(= *Lidbeckia bipinnata* Thunb.,
= *Lasiospermum radiatum* Trevir.)

Decumbent to erect herb, up to 400 mm tall. Leaves alternate, bipinnatisect, lobes apiculate. Heads solitary on long peduncles. Pappus absent. *Flowers with white to pale purplish pink rays, disc yellow; November and February*. In vleis, but also on mountains, flats and roadsides. *Leendertz sub Tvl.Mus. 10858*.

W S C N E

Launaea Cass. (s. Afr.: 4 spp.)

9593000

Jeffrey. 1966. Kew Bull. 18,3: 463–464.
 Hilliard. 1977. Compositae in Natal: 619–621.
 Pope. 1992. F.Z. 6,1: 214–221.

intybacea (Jacq.) P. Beauv.

(= *Lactuca intybacea* Jacq.)

Annual herb, up to 1 m high. Pappus heterogeneous, of setae and of more slender adherent down-like hairs intermixed. Heads terminal on short side branches of inflorescence, 20–26 flowers per head. Inner involucre bracts 7–9; outer involucre bracts acute, with distinct hyaline margins. Achenes glabrous, rugose or verrucose, 2.6–4.0 mm long. *Flowers white, cream, yellow or purplish; November to February.* Weed of disturbed places. *Codd 10377.*

W	S	C	N	E
---	---	---	---	---

nana (Baker) Chiov.

(= *Lactuca nana* Baker)

Acaulescent, cushion-like perennial herb. Leaves in solitary rosettes. Heads with 20–25 flowers. Pappus homogeneous, of setae only. Achenes smooth, 3.4–5.5 mm long. *Flowers yellow or pink; August to November.* Open grassland. *Liebenberg 3040.*

W	S	C	N	E
---	---	---	---	---

rarifolia (Oliv. & Hiern) Boullos var. **rarifolia**

(= *Sonchus rarifolius* Oliv. & Hiern)

Acaulescent, cushion-like perennial herb. Leaves in solitary rosettes. Heads with 6–12 flowers. Pappus homogeneous, of setae only. Achenes smooth, 5.8–9.0 mm long. *Flowers yellow; August to November.* Open grassland. *Strey 3109.*

W	S	C	N	E
---	---	---	---	---

Leucanthemum Mill. (s. Afr.: 1 sp.) 9341080

Heywood. 1976. Fl. Europ. 4: 175.
 Bremer & Humphries. 1993. Bull. Nat. Hist. Museum (Bot.) 23,2: 141.

vulgare Lam.*

(= *Chrysanthemum leucanthemum* L.)

Perennial herb. Basal leaves in a rosette, roundish to obovate-spathulate, margins crenate to dentate or more deeply lobed, on long petioles. Stem leaves sessile, oblong to narrowly spathulate, margins toothed to pinnatifid. Heads solitary on long, nearly nude stalks. *Flowers with white rays, disc yellow; November to February.* Garden escape in open grassland and along grassy roadsides. Native to Europe. *Galpin 10225.*

W	S	C	N	E
---	---	---	---	---

Litogyne Harv. (s. Afr.: 1 sp.)

8953010

Hilliard. 1977. Compositae in Natal: 119–120.
 Anderberg. 1991. Pl. Syst. Evol. 176: 168.

gariepina (DC.) Anderb.

(= *Epaltes alata* (Sond.) Steetz,
 = *E. gariepina* (DC.) Steetz)

Perennial herb or shrub, up to 1 m high. Stems winged. Leaves lanceolate to oblong, sessile, gland-dotted, margins entire or remotely denticulate. Heads small, few together in subumbellate clusters terminating side branches. *Flowers purple; July to June.* Sandy grassland or open woodland or as a roadside weed. *Retief 1870.*

W	S	C	N	E
---	---	---	---	---

Lopholaena DC. (s. Afr.: 8 spp.) 9401000

Phillips & Smith. 1934. Trans. R. Soc. S. Afr. 21: 221–238.
 Hilliard. 1977. Compositae in Natal: 365–367.
 Brusse. 1991. Nord. J. Bot. 11: 79–83.

coriifolia (Sond.) E. Phillips & C.A. Sm.

(= *L. randii* S. Moore,
 = *Othonna coriifolia* Sond.)

Shrub, up to 1 m high. Leaves sessile, shortly but obscurely decurrent on branches. Heads solitary on abbreviated axillary or subterminal shoots. *Flowers white; June to November.* Rocky outcrops and ridges. *Van Vuuren 265.*

W	S	C	N	E
---	---	---	---	---

disticha (N.E. Br.) S. Moore

(= *Othonna disticha* N.E. Br.)

Perennial herb, up to 0.6 m high. Leaves shortly decurrent on stem. Heads solitary or a few together, often partly hidden by foliaceous bracts. *Flowers white; February to November.* Stony grassland on mountains. *Codd 4308.*

W	S	C	N	E
---	---	---	---	---

festiva Brusse

Shrub, up to 1 m high. Leaves distinctly petioled. Heads aggregated in terminal false panicles. *Flowers white; June to August.* Wooded mountainsides. *Stalmans 1698.*

W	S	C	N	E
---	---	---	---	---

segmentata (Oliv.) S. Moore

(= *Senecio segmentatus* Oliv.)

Perennial herb, up to 1 m high. Leaves decurrent on stem. Heads many in a loose open panicle. *Flowers pinkish; September to February.* Grassland. *Steyn 139.*

W	S	C	N	E
---	---	---	---	---

Macowania Oliv. (s. Afr.: 9 spp.) 9053000

Hilliard. 1976. Notes R. bot. Gdn Edinb. 34,3: 260–276.

tenuifolia M.D. Hend.

Shrub, 0.6–1.0 m high. Leaves linear, margins revolute, midrib prominent below, apex gradually narrowed to relatively long apiculus. Heads sessile or on short heavily bracteate peduncles. *Flowers with yellow rays and*

disc; involucre bracts straw-coloured; August to February. Grassland among rock outcrops. *Stalmans 713*.

W S C N E

Melanthera J.B. Rohr (s. Afr.: 4 spp.) 9204000

Wild. 1967. *Kirkia* 6: 48–54.

Merxmüller. 1967. F.S.W.A. 139: 110–111.

scandens (Schumach. & Thonn.) *Roberty* subsp. **dregei** (DC.) Wild

Herb, up to 1 m high. Leaves narrowly oblong-lanceolate, usually with basal lobes, cuneate at base. Setae of achenes 8–15. Styles present in ray flowers. *Flowers orange-yellow or yellow; September to May*. Often found in swamps or along streams. *Buitendag 101*.

W S C N E

triternata (Klatt) Wild

(= *M. marlothiana* O. Hoffm.,
= *Wedelia triternata* Klatt)

Herb, up to 1 m high. Leaves broadly deltate-ovate, base truncate and abruptly cuneate, margins irregularly toothed or lobed. Setae of achenes 1–4(5). Styles present in ray flowers. *Flowers yellow; December to February*. In swamp, *Acacia* savanna or thickets or bushland. *Schlieben & Strey 8276*.

W S C N E

Metalasia R. Br. (s. Afr.: 52 spp.) 9043000

Karis. 1989. *Opera Bot.* 99: 89–93.

densa (Lam.) P.O. Karis

Erect shrub, up to 2.5 m high, rarely 3–4 m. Leaves straight with axillary brachyblasts. Heads 3–5-flowered. Involucres narrow, brownish below with white innermost involucre bracts. Outer to inner involucre bracts with apiculate tips. *Flowers with outer involucre bracts brownish, rarely reddish or light pink, inner white, rarely creamy white or dark brown to dark reddish; petaloid involucre bracts white to whitish; June to August*. Becoming weed-like along roadsides, on disturbed ground, etc. *Devenish 1018*.

W S C N E

Mikania Willd. (s. Afr.: 3 spp.) 8818000

Holmes. 1982. *Bot. Jb.* 103,2: 211–246.

capensis DC.

Climber. Leaves opposite, ovate, serrate to dentate, base cordate, glabrous to pilose. Inflorescence a dense corymb. Heads 9–12 mm long. *Flowers white; May to October and January to February*. Forest margins, streams and wet, mostly open areas. *Codd 6130*.

W S C N E

Mikaniopsis Milne-Redh. (s. Afr.: 1 sp.) 9411100

Hilliard. 1977. *Compositae* in Natal: 499–500.

Jeffrey. 1986. *Kew Bull.* 41,4: 878–879.

cissampelina (DC.) C. Jeffrey

(= *Senecio cissampelinus* (DC.) Sch. Bip.,
= *Cacalia cissampelina* DC.)

Twining herb. Leaves rhomboid or deltoid-ovate in outline, bluntly 3–5-angled; lower surface thinly woolly or cobwebby, glabrescent. Heads discoid, in small axillary corymbose panicles. Achenes glabrous. *Flowers creamy white or pale yellow; May to August*. Climber in forest. *Van der Schijff 5541*.

W S C N E

Montanoa Cerv. (s. Afr.: 2 spp.) 9170000

Hilliard. 1977. *Compositae* in Natal: 305.

hibiscifolia Benth.*

Semishrub, up to 6 m high. Leaves opposite, deeply palmately lobed, softly pubescent, base deeply cordate with a pair of auricles at apex of petiole, petiole up to 100 mm. *Flowers with white rays and yellow disc; June*. Weed along roadsides, particularly through forest. Native to Central America. *Wright 5867*.

W S C N E

Nicolasia S. Moore (s. Afr.: 6 spp.) 8951000

Merxmüller. 1967. F.S.W.A. 139: 113–117.

Anderberg. 1991. *Pl. Syst. Evol.* 176: 161–162.

nitens (O. Hoffm.) Leins

(= *Laggera dinteri* Thell. ex Merxm.,
= *N. quinqueseta* O. Hoffm. ex Thell.)

Herb, up to 500 mm tall, with long, villous hairs or glabrous. Leaves linear. Heads large, 10–15 mm in diameter. *Flowers purple; January*. *Leendertz 6681*.

W S C N E

stenoptera (O. Hoffm.) Merxm. subsp. **stenoptera**

(= *Laggera stenoptera* O. Hoffm.)

Herb, up to 1 m high, glandular. Stems winged. Leaves lanceolate to narrowly lanceolate, sessile, margins dentate. Heads less than 10 mm in diameter. *Flowers mauve; June and September to October*. *Sutton 1002*.

W S C N E

Nidorella Cass. (s. Afr.: 11 spp.) 8925000

Wild. 1969. *Bolm Soc. broteriana* 43: 213–240.

Wild. 1975. *Kirkia* 10,1: 62–72.

Hilliard. 1977. *Compositae* in Natal: 79–85.

anomala Steetz

(= *N. angustifolia* O. Hoffm.,
= *N. depauperata* Harv.,
= *N. solidaginea* auct. non DC., Wild)

Herb, up to 0.6 m high. Leaves linear, linear-lanceolate or ovate-lanceolate, often folded lengthwise, apex

acute. Outer flowers 3- or 4-toothed. Pappus bristles few (up to 10). *Flowers yellow; November to June*. In grassland and on edge of marshes; also invading overgrazed grasslands and roadsides. *Codd 2675*.

W S C N E

auriculata DC.

(= *N. auriculata* DC. subsp. *polycephala* (DC.) Wild)

Perennial herb, up to 1.5 m high. Leaves mostly distinctly eared at base, main and side veins strongly raised below; pubescent. Outer flowers with a short ray. Pappus copious. *Flowers pale or deep yellow; July to June*. On grassy slopes, in marshy places or forest margins; sometimes invading disturbed areas. *Codd 7842*.

W S C N E

hottentotica DC.

Annual herb, up to 1 m high. Leaves obovate to linear-obovate, entire, lanate, sometimes becoming glabrescent with age but always retaining some lanate hairs at nodes or in leaf axils. Outer flowers with a short ray. Pappus copious. *Flowers yellow; July to June*. Grassland or woodland, often among rocks on hillsides; can spread to disturbed places. *Codd 2569*.

W S C N E

microcephala Steetz

(= *N. membranifolia* Steetz,

= *N. resedifolia* DC. subsp. *microcephala* (Steetz) Wild)

Annual herb, up to 1.3 m high. Leaves membranous, not pinnately lobed, narrowly to broadly obovate, coarsely toothed, ± auriculate; lower leaves distinctly pseudopetiolate. Heads ± 2.5 mm in diameter. Outer flowers with a short ray. Pappus copious. *Flowers yellow; August*. Low, hot areas, often in riverbeds and damp places. *Van der Schijff 3145*.

W S C N E

resedifolia DC. subsp. *resedifolia*

(= *N. hirta* DC.,

= *N. pinnatilobata* DC.)

Annual herb, up to 1 m high. Leaves often pinnatipartite with 1 or 2 pairs of lateral lobes, sometimes simple, not auriculate at base. Stems and leaves mostly rough hairy. *Flowers bright yellow; July to June*. A weed of roadsides, cultivated land and overgrazed grassland. *Zambatis 1211*.

W S C N E

undulata (Thunb.) Sond. ex Harv.

(= *Chrysocoma undulata* Thunb.)

Perennial herb, up to 1 m high. Outer flowers with a short ray. Pappus copious. Radical leaves developed, up to 350 mm long, attenuate towards base; cauline leaves cordate at base, ± amplexicaul. *Flowers yellow; January*. Marshy places or damp hollows in grassland. *Bruce & Kies 86*.

W S C N E

Nolletia Cass. (s. Afr.: 8 spp.)

8929000

Hoffmann. 1893. Bull. Herb. Boissier 1: 76–77.

Merxmüller. 1967. F.S.W.A. 139: 118–119.

Hilliard. 1977. Compositae in Natal: 96–98.

arenosa O. Hoffm.

(= *Chrysocoma dinteri* Muschl.)

Undershrub, 300–400 mm tall, leafy. Leaves not close-set and imbricate, linear, 1(–2) mm broad and 20 mm long, pubescent. Heads solitary. *Flowers yellow; May and October*. Sandy soil. *Repton 7156A*.

W S C N E

ciliaris (DC.) Steetz

(= *Leptothamnus ciliaris* DC.)

Undershrub, up to 200 mm tall. Leaves close-set, imbricate, linear or lanceolate, strongly ciliate. Heads solitary, terminal. *Flowers yellow; September to April*. Grassland in sandy soil. *Louw 410*.

W S C N E

rarifolia (Turcz.) Steetz

(= *Leptothamnus rarifolius* Turcz.)

Undershrub, up to 300 mm tall. Leaves distant, filiform, narrower than 1 mm, glabrous. Heads solitary, terminal. Involucral bracts with large embedded orange oil sacs. *Flowers yellow; September to February*. In open grassland. *Van Hoepen 1825*.

W S C N E

ruderalis Hilliard

Undershrub, up to 200(–400 mm) tall. Leaves distant, linear, 1–2 mm broad, glabrous. Heads solitary at tips of inflorescence branches. Involucral bracts with minute, superficial, colourless gland dots. *Flowers yellow; December to February*. Grassland or invading bare areas. *Van der Schijff 2041*.

W S C N E

Oncosiphon Källersjö (s. Afr.: 8 spp.)

9366020

Källersjö. 1988. Bot. J. Linn. Soc. 96: 310–314.

piluliferum (L.f.) Källersjö

(= *Pentzia pilulifera* (L.f.) Fourc.,

= *P. globifera* (Thunb.) Hutch.)

Annual herb, up to 500 mm tall. Leaves bipinnatisect with narrow lobes, petiolate. Heads solitary, terminal on long peduncles. *Flowers yellow; October to December*. Grassland, often on old cultivated lands. *Van Wyk 1779*.

W S C N E

Osteospermum L. (s. Afr.: 37 spp.)

9427000

Norlindh. 1943. Studies in the Calenduleae: 98–357.

leptolobum (Harv.) Norl.

(= *Tripteris leptoloba* Harv.)

Shrub, 0.3–0.6 m high. Leaves alternate, 3–5-dentate, 3–5-lobed, pinnately 5–7-partite or uppermost entire;

densely glandular viscid; rachis and leaf lobes linear and semiterete. Achenes with 3 wings. *Flowers pale yellow; November to January*. Grassland. *Sutton 285*.

W S C N E

microphyllum DC.

Shrub, up to 500 mm tall. Leaves alternate, entire, 4–10 mm long, linear to (ob)lanceolate-linear, rigid, midrib slightly elevated below. Involucral bracts obtuse to subacute. Achenes 3-winged. *Flowers yellow; April*. Sandy areas. *Acocks 2277*.

W S C N E

muricatum E. Mey. ex DC. subsp. **muricatum**

Perennial herb, 0.2–0.6 m high, whole plant usually clothed with short, rigid, glanduliferous hairs. Leaves alternate, sessile, linear-lanceolate to oblong, denticulate to pinnatifid; viscid hispidulous, glabrescent. Ray flowers very short, as long as or slightly longer than involucral bracts. Achenes obovoid or obpyramidal-triangular with a number of processes. *Flowers pale to bright yellow; July to June*. Variety of habitats—grassland, open woodland, etc. *Raal 605*.

W S C N E

spinescens Thunb.

(= *Tripteris pachypteris* Harv.)

Spiny shrub, 0.5–1.0 m high. Leaves alternate, linear, linear-oblong to linear-spathulate, 5–20 × 1–4 mm, margins (2-)3-dentate or (2-)3-fid, or entire; rachis and lobes flat. Achenes with 3 wings. *Flowers yellow; September to October*. Edges of pans, riverbanks or streambanks. *Van Wyk 559*.

W S C N E

striatum Burtt Davy

(= *Dimorphotheca nervosa* Hutch.)

Perennial herb, 100–200 mm tall. Leaves alternate, linear-lanceolate to lanceolate, 15–45 mm long, entire, with prominent longitudinal nerves. Achenes with 3 wings. *Flowers yellow; April to November*. Grassland on rocky ridges. *Codd 8028*.

W S C N E

Othonna L. (s. Afr.: 95 spp.)

9420000

Hilliard. 1977. *Compositae in Natal*: 513–514.

natalensis Sch. Bip.

(= *O. scapigera* Harv.)

Perennial herb, 200–500 mm tall. Leaves in a rosette, linear to broadly lanceolate, entire or rarely somewhat toothed, glabrous, thick, flushed reddish purple at base. Heads solitary, terminal, or long peduncles; radiate; pappus dirty white or buff, persistent. *Flowers yellow; July to December and in April*. Grassland. *Devenish 1192*.

W S C N E

Parthenium L. (s. Afr.: 1 sp.)

9138000

Hilliard. 1977. *Compositae in Natal*: 294–295.

hysterophorus L.*

Annual herb, up to 0.6 m high. Leaves deeply bipinnatisect, puberulous, decreasing in size upwards. Heads 3 mm in diameter, on slender peduncles, in lax, many-headed panicle. *Flowers with (small) white rays and yellowish disc; January to May*. Weed of cultivation and in disturbed places. Native to southern America and the West Indies. *Kluge 2517*.

W S C N E

Pechuel-Loeschea O. Hoffm. (s. Afr.:

1 sp.)

8943000

Merxmüller. 1967. *F.S.W.A.* 139: 135.

Wild. 1969. *Kirkia* 7,1: 133–134.

leubnitziae (Kuntze) O. Hoffm.

(= *Pluchea leubnitziae* (Kuntze) N.E. Br.)

Shrub, up to 1.3 m high. Leaves narrowly elliptic to elliptic or narrowly obovate-elliptic, sessile and decurrent on stem, margin entire. Heads in clusters of 1–3 at ends of branches. *Flowers purple; June to November*. Sandveld, often on riverbanks. *Zambatis 1208*.

W S C N E

Pegolettia Cass. (s. Afr.: 9 spp.)

9073000

Anderberg. 1986. *Cladistics* 2,2: 158–186.

lanceolata Harv.

(= *Inula lanceolata* (Harv.) Burtt Davy,
= *Vernonia collina* Klatt)

Perennial herb, up to 400 mm tall. Leaves entire, narrow, lanceolate, bristly hairy. Heads with large herbaceous bracts. Pappus scales inconspicuous, bristle-like. *Flowers yellow; July to December*. Stony or rocky grassland, e.g. mountainsides. *Strey 3423*.

W S C N E

retrofracta (Thunb.) Kies

(= *P. polygalaeifolia* Less.)

Subshrub, up to 0.6 m high. Leaves entire, narrowly elliptic to ovate. Corolla lobes recurved outwards. Pappus with conspicuous outer scales, bristles barbellate. *Flowers yellow or sometimes purplish; March and June*. Sandy, gravelly and stony places. *Codd & Dyer 3830*.

W S C N E

senegalensis Cass.

Annual herb, up to 0.6 m high. Leaves entire or shallowly and bluntly serrate. Involucral bracts acute to obtuse. Corolla zygomorphic, 1 lobe much larger than others, lobes erect. Pappus with conspicuous outer scales, bristles plumose. *Flowers yellow becoming purplish with age; December to September*. All kinds of arid habitats, also as a weed or a casual in cultivated areas. *Codd 4273*.

W S C N E

tenuifolia Bolus

Small shrub, up to 0,6 m high. Leaves small, shorter than 25 mm, entire, filiform. Corolla lobes erect. Pappus with conspicuous outer scales, bristles barbellate. *Flowers yellow or pale purplish; November to April.* Rocky slopes and sandy ground. *Venter 4227.*

W	S	C	N	E
---	---	---	---	---

Pentatrachia Klatt (s. Afr.: 4 spp.) 9061010

Moore. 1917. *J. Bot.*, Lond. 55: 106.

Merxmüller. 1954. *Mitt. bot. StSamml.*, Münch. Heft 9–10: 436–440.

alata S. Moore

(= *Philyrophyllum alatum* Burtt Davy,

= *Pulicaria alata* E. Phillips)

Perennial herb, up to 1 m high. Leaves deeply and irregularly dentate, pubescent; petioles winged. Heads radiate. Outer pappus consisting of very minute scales. *Flowers with white rays and yellow disc; August to October.* Rock crevices or grassland on mountainsides. *Venter 9825.*

W	S	C	N	E
---	---	---	---	---

Pentzia Thunb. (s. Afr.: 21 spp.) 9366000

Harvey. 1865. *F.C.* 3: 171–174.

Hutchinson. 1916. *Kew Bull.*: 241–254.

Kies. 1945. *Jl S. Afr. Bot.* 11: 118–122.

Merxmüller. 1967. *F.S.W.A.* 139: 139–142.

Källersjö. 1988. *Bot. J. Linn. Soc.* 96: 302–306.

calcareea Kies

Small shrub, up to 300 mm tall. Leaves alternate or fascicled, petiolate, imparipinnately lobed with 1 or 2 pairs of linear, obtuse lobes. Heads terminal, solitary, pedunculate. *Flowers golden yellow; November to June.* Restricted to lime or calcareous soils. *Leistner 44.*

W	S	C	N	E
---	---	---	---	---

cooperi Harv.

Shrub, up to 1,5 m high. Leaves alternate, sessile, oblong or narrowly cuneate, entire or 2- or 3(-5)-toothed at tips, gland-dotted. Heads many in terminal, compound corymbs. *Flowers bright yellow; April.* Grassland on hillsides. *Mogg 19509.*

W	S	C	N	E
---	---	---	---	---

globosa Less.

(= *P. globifera* Licht. ex Less.)

Dwarf shrub, up to 500 mm tall. Leaves alternate, sessile, pinnatipartite. Heads solitary, pedunculate. Involucral bracts linear-lanceolate. *Flowers yellow; July to April.* Grassland. *Bredenkamp 190.*

W	S	C	N	E
---	---	---	---	---

incana (Thunb.) Kuntze

(= *P. virgata* Less.,

= *Chrysanthemum incanum* Thunb.)

Shrub, up to 0,6 m high, ± grey-pubescent. Leaves petiolate, trifid at apex or pinnatipartite, lobes linear. Involucral bracts obtuse. Heads terminal, solitary, on long peduncles. *Flowers yellow; March to April.* Rocky or sandy soil, open grassland. *Pienaar 1047.*

W	S	C	N	E
---	---	---	---	---

lanata Hutch.

Shrub, up to 0,6 m high. Leaves alternate, sessile, pinnate. Young branches densely albo-tomentose. Heads solitary, terminal, pedunculate. Involucral bracts linear to lanceolate. *Flowers yellow; September, December to January and April to May.* Grassland. *Retief 1856.*

W	S	C	N	E
---	---	---	---	---

monocephala S. Moore

(= *P. integrifolia* Muschl. ex Dinter)

Pubescent dwarf shrub, up to 500 mm tall. Leaves alternate, sessile or narrowed to petiole-like base, obovate to lanceolate, margins entire or trifid to pinnate at apex. Heads solitary, terminal, on long peduncles. *Flowers yellow; February to April.* Dolomite hillsides. *Mogg 22816.*

W	S	C	N	E
---	---	---	---	---

viridis Kies

Bright green dwarf shrub, up to 300 mm tall. Leaves alternate, sessile, pinnate, lobes stiffly spreading, arising in more than one plane from leaf rachis. Heads terminal, solitary, on leafy branchlets. *Flowers golden yellow; October.* Vleis, soil or damp sand near dams and rivers. *Van der Merwe 46.*

W	S	C	N	E
---	---	---	---	---

Philyrophyllum O. Hoffm. (s. Afr.:

1 sp.)

9083000

Merxmüller. 1967. *F.S.W.A.* 139: 146–147.

schinzii O. Hoffm.

Perennial herb, up to 400 mm tall. Leaves petiolate, ovate-deltoid, coarsely dentate. Inner pappus of bristles. *Flowers yellow; July to June.* Shady rocky places. *Codd 10498.*

W	S	C	N	E
---	---	---	---	---

Phymaspermum Less. emend. Källersjö

(s. Afr.: 19 spp.)

9336000

Harvey. 1865. *F.C.* 3: 160.

Hutchinson. 1916. *Kew Bull.* 1916: 172–175.

Hilliard. 1977. *Compositae in Natal*: 333–345.

Källersjö. 1985. *Nord. J. Bot.* 5: 535–538.

Brusse. 1989. *Bothalia* 19,1: 29–31.

acerosum (DC.) Källersjö
(= *Athanasia acerosa* (DC.) Harv.)

Shrub, up to 2 m high. Leaves sessile, pinnate, filiform. Heads narrowly cylindrical, 2–12-flowered, many in dense terminal compound corymbs. *Flowers bright yellow; March to December*. Open grassland or forest margin scrub. *Codd 7759*.

W S C N E

aciculare (E. Mey. ex Harv.) Benth. & Hook. f. ex B.D. Jacks.

(= *Locaste acicularis* E. Mey. ex Harv.)

Dwarf shrub, up to 500 mm tall. Leaves linear, entire, pungent-tipped. Heads 12–15-flowered, 7–8 mm in diameter, in lax corymbs; outer female flowers 1- or 2-ligulate, sometimes absent. *Flowers with white rays (if rays present), disc yellow; February*. On calcareous soil. *Van Wyk 1451*.

W S C N E

argenteum Brusse

Subshrub, up to 0,85 m high. Leaves sessile, entire or 1–3 times pinnate, segments filiform or linear, silvery hirsute. Heads narrowly cylindrical, 10–17-flowered, numerous, terminally corymbose. *Flowers yellow; May to June*. In grassland or open woodland on dolomite areas. *Venter 10704*.

W S C N E

athanasioides (S. Moore) Källersjö
(= *Brachymeris athanasioides* (S. Moore) Hutch.,
= *Pentzia athanasioides* S. Moore)

Shrub, up to 1,5 m high. Leaves sessile, mostly entire, sometimes pinnate in upper half, linear, up to 40 mm long. Heads campanulate, many-flowered, up to 10 mm in diameter, in terminal umbels. *Flowers yellow; June to December and in March*. Mountain grassland. *Mogg 28227*.

W S C N E

bolusii (Hutch.) Källersjö
(= *Brachymeris bolusii* Hutch.)

Shrub, up to 2 m high. Leaves up to 50 mm long, sessile, mostly entire, linear, sometimes pinnate in upper half. Heads $\pm$ 5 mm in diameter, in terminal umbels, inner involucre bracts glabrous. *Flowers yellow; March to December*. Mountain grassland. *Netshiungani 641*.

W S C N E

montanum (Hutch.) Källersjö
(= *Brachymeris montana* Hutch.)

Shrub, up to 1,5 m high. Leaves up to 40 mm long, linear, mostly entire or sometimes trilobed at tips. Heads $\pm$ 5 mm in diameter, apices of inner involucre bracts lanate-pubescent. *Flowers yellow; June to November*. Hillsides in mountain grassland or woodland. *Codd 1603*.

W S C N E

woodii (Thell.) Källersjö
(= *Athanasia woodii* (Thell.) Hilliard,
= *Pentzia woodii* Thell.)

Villous to glabrous subshrub, up to 500 mm tall. Primary leaves with compact axillary leaf tufts or shoots, densely grey-woolly, pinnately divided. Heads narrowly campanulate, up to 7 mm across, up to $\pm$ 30-flowered, in compact, compound terminal corymbs. Involucral bracts ovate-lanceolate, flat. *Flowers bright yellow; December*. Grass slopes. *Muller 2057*.

W S C N E

Picris L. (s. Afr.: 2 spp.) 9575000

Hilliard. 1977. *Compositae* in *Natal*: 604–605.

echioides L.*

Hispid annual or perennial herb, up to 1 m high. Radical and lower stem leaves oblanceolate, narrowed to petiole-like base, irregularly toothed; upper leaves lanceolate to oblong, sessile, clasping. Outer bracts large, ovate-cordate. Achenes long-beaked. *Flowers yellow; December to March and in June*. A weed of disturbed places. Native to Europe and Asia. *Hanekom 1690*.

W S C N E

Platycarpha Less. (s. Afr.: 3 spp.) 9441000

Moore. 1903. *J. Bot., Lond.* 41: 136.

parvifolia S. Moore

Acaulescent perennial herb. Leaves linear-oblanceolate, obtuse, denticulate, glandular, albo-lanate below. Heads discoid, in glomerules; involucre bracts shortly spinulose-acuminate. Pappus of 12 scales. *Flowers mauve to pale purple; July to October*. Grassland in damp situations. *Hanekom 1835*.

W S C N E

Pluchea Cass. (s. Afr.: 3 spp.) 8941000

Hilliard. 1977. *Compositae* in *Natal*: 116–117.

dioscoridis (L.) DC.

(= *Baccharis dioscoridis* L.)

Perennial herb or shrub, up to 3,5 m high. Leaves oblanceolate to narrowly elliptic, glabrous or pubescent, subsessile, margins entire or serrulate. Heads in terminal corymbose panicles. *Flowers purplish; July to June*. Moist places e.g. along sandy riverbanks and riverbeds. *Codd 4277*.

W S C N E

Printzia Cass. (s. Afr.: 6 spp.) 9059000

Hilliard. 1977. *Compositae* in *Natal*: 273–278.

Kroner. 1980. *Mitt. bot. StSamml., Münch.* 16: 108–128.

auriculata Harv.

(= *P. densifolia* J.M. Wood & M.S. Evans,
= *P. laxa* N.E. Br.)

Perennial herb, up to 2 m high. Leaves ovate-elliptic, auricles often conspicuous particularly on main stem leaves, sometimes absent, margins coarsely and irregularly toothed. Rays conspicuous, longer than involucre. Compound inflorescence pyramidal in outline. *Flowers with white, pink or mauve rays; disc white often tinged mauve; July*. In scrub on forest margins and, in mountains, along rocky and cliff-backed watercourses. *Devenish 677*.

W	S	C	N	E
---	---	---	---	---

huttonii Harv.

Scrambling shrub, up to 0,75 m high. Leaves broadly lanceolate to narrowly ovate, margins remotely toothed; petiole auricled at base. Rays very short, not or scarcely exceeding involucre. *Flowers with white rays tipped pink; disc yellow or white; June to August*. Mountain grassland in kloofs and along watercourses. *Venter 10856*.

W	S	C	N	E
---	---	---	---	---

Pseudoconyza Cuatrec. (s. Afr.: 1 sp.) 8940010

Wild. 1969. *Kirkia* 7,1: 125–132.

Anderberg. 1991. *Pl. Syst. Evol.* 176: 160.

viscosa (Mill.) D'Arcy

(= *Conyza aurita* L.f.,
= *Laggera aurita* (L.f.) Sch. Bip. ex C.B. Clarke,
= *Blumea aurita* (L.f.) DC.)

Herb, up to 0,6 m high. Stems interruptedly winged. Leaves coarsely serrate, sometimes pinnatifid. Inflorescence a lax terminal panicle. Peduncles slender, straight with heads held erect. *Flowers pinkish purple; May to September*. Moist places, sometimes a weed of cultivation or invader of bare ground. *Codd & De Winter 5576*.

W	S	C	N	E
---	---	---	---	---

Pseudognaphalium Kirp. (s. Afr.:

3 spp.)

8992050

Hilliard. 1983. *F.S.A.* 33,7,2: 53–56.

luteo-album (L.) Hilliard & B.L. Burt

(= *Gnaphalium luteo-album* L.)

Decumbent or erect annual herb, up to 500 mm tall. Lower leaves oblanceolate, becoming smaller and lanceolate to linear upwards, obtuse to subacute, not discolorous. *Flowers whitish, tipped reddish; July to June*. Sandy or clayey soils near streams and marshes, weed of cultivation. *Bredenkamp & Van Vuuren 35*.

W	S	C	N	E
---	---	---	---	---

oligandrum (DC.) Hilliard & B.L. Burt

(= *Gnaphalium oligandrum* (DC.) Hilliard & B.L. Burt)

Annual herb, up to 1 m high. Leaves oblong, oblong-lanceolate or lanceolate, apex subacute to acute, base

cordate-clasping, not decurrent, discolorous. *Flowers whitish; November to April*. Dry sandy or stony places, often on roadsides. *Hanekom 1977*.

W	S	C	N	E
---	---	---	---	---

undulatum (L.) Hilliard & B.L. Burt

(= *Gnaphalium undulatum* L.,
= *Helichrysum montosicolum* Gand.)

Annual herb, up to 0,6 m high. Main stem leaves decurrent, wings often reaching the node below. Leaves oblong-lanceolate or lanceolate, apex acute to acuminate, discolorous. *Flowers yellowish; April*. Damp places, particularly around rock outcrops or on stream-banks and riverbanks. *Mogg 15150*.

W	S	C	N	E
---	---	---	---	---

Psiadia Jacq. (s. Afr.: 1 sp.)

8923000

Wild. 1975. *Kirkia* 10,1: 24–25.

punctulata (DC.) Oliv. & Hiern ex Vathek

(= *Nidorella punctulata* DC.,
= *Psiadia arabica* Jaub. & Spach)

Shrub, 1–2 m high. Leaves narrowly lanceolate, often undulate and serrulate, tapering to an acuminate apex, resinous and glistening. Ray flowers dentate at apex. *Flowers yellow; July to June*. Part of undergrowth in bushveld, often on hillsides and rocky outcrops. *Herman 201*.

W	S	C	N	E
---	---	---	---	---

Pteronia L. (s. Afr.: 70 spp.)

8862000

Hutchinson & Phillips. 1917. *Ann. S. Afr. Mus.* 9: 277–329.

glauca Thunb.

(= *P. candollei* Harv.,
= *P. glabrata* DC.)

Shrub, up to 0,6 m high. Leaves opposite, lanceolate or linear-lanceolate, canescent-tomentose. Heads 4-flowered, solitary, terminal. Involucral bracts subacute with membranous margins, distinct midrib and band of canescent hairs up the middle. Pappus straw-coloured. *Flowers yellow; March*. Sandy soil. *Forsyth s.n. NH 32414*.

W	S	C	N	E
---	---	---	---	---

Pterothrix DC. (s. Afr.: 6 spp.)

9042000

Harvey. 1865. *F.C.* 3: 275.

Merxmüller. 1967. *F.S.W.A.* 139: 159.

spinescens DC.

(= *Amphiglossa triflora* DC.,
= *Helichrysum armatum* Dinter ex Merxm.)

Dwarf shrub, up to 300 mm tall. Branchlets spinous. Leaves linear, up to 10 mm long, slightly recurved. Heads 6–7 mm long. *Flowers with brownish involucral bracts, disc flowers yellow, sometimes tinged red; February*. *Van Wyk 2675*.

W	S	C	N	E
---	---	---	---	---

Pulicaria Gaertn. (s. Afr.: 1 sp.) 9078000

Hilliard. 1977. Compositae in Natal: 281–282.

scabra (Thunb.) Druce(= *P. capensis* DC.)

Annual herb, up to 1 m high. Leaves sessile, linear-oblong, decreasing in size upwards, base cordate-amplexicaul, margins entire or remotely denticulate. Heads solitary, arranged in large or small spreading corymbs. *Flowers yellow; July to June.* In marshy or damp places. *Zambatis 1235.*

W S C N E

Schistostephium Less. (s. Afr.: 7 spp.) 9356000

Baker. 1897. Kew Bull. 1897: 270.

Hilliard. 1977. Compositae in Natal: 357–360.

artemisiifolium Baker

Densely pubescent perennial herb, up to 400 mm tall. Leaves oblong or obovate in outline, pinnatifid, margins revolute. Heads in terminal corymbs. *Flowers yellow; December to July.* Mountain grassland. *Brusse 5569.*

W S C N E

crataegifolium (DC.) Fenzl ex Harv.(= *S. villosum* Hutch.,= *Tanacetum crataegifolium* DC.)

Grey silky-villous decumbent or erect perennial herb, up to 500 mm tall. Leaves sessile, ovate or oblong-ovate in outline, sharply and deeply toothed, pinnately lobed or cut almost to midrib, margins entire or with 1 or 2 teeth. Heads in terminal corymbs. *Flowers bright yellow; November to July.* Stony grass slopes, particularly around rock outcrops. *Scheepers 1456.*

W S C N E

griseum (Harv.) Hutch.(= *Tanacetum griseum* Harv.)

Densely silky-canescens perennial herb, up to 0,75 m high. Leaves pinnately divided, margins entire, strongly revolute. Heads solitary on long nude peduncles. *Flowers bright yellow; December.* Short, stony grassland. *Leipoldt sub PRE 43434.*

W S C N E

heptalobum (DC.) Oliv. & Hiern(= *S. saxicola* Hutch.,= *Tanacetum heptalobum* DC.)

Pubescent or thinly hairy subshrub, up to 1,2 m high. Leaves roughly oblong in outline, pinnatisect. Heads in corymbs. *Flowers bright yellow; July to June.* Margins of forest and bush clumps. *Germishuizen 829.*

W S C N E

hippiifolium (DC.) Hutch.(= *Tanacetum hippifolium* DC.)

Shrub, up to 1,2 m high, glabrous or nearly so. Leaves oblong in outline, once or twice pinnatisect. Heads in

corymbs. *Flowers bright yellow; June.* On hillsides. *Obermeyer & Verdoorn 35.*

W S C N E

rotundifolium (DC.) Fenzl ex Harv.(= *Tanacetum rotundifolium* DC.)

Shrub, up to 1,2 m high. Leaves broadly ovate to rotund in outline, coarsely crenate-dentate, silky tomentose. Heads in corymbs. *Flowers bright yellow; July to June.* Forest margins. *Buitendag 1233.*

W S C N E

Schkuhria Roth (s. Afr.: 1 sp.)

9291000

Hilliard. 1977. Compositae in Natal: 326–327.

pinnata (Lam.) Cabrera*(= *S. bonariensis* Hook. & Arn.)

Annual herb, up to 0,6 m high. Stems ribbed with small clavate glands on ribs. Leaves alternate, pinnately dissected, lobes filiform, glandular-punctate. Heads on long, filiform peduncles. Pappus of small scales. *Flowers yellow; July to June.* A weed found along roadsides, overgrazed grassland, river valleys and woodland. Native to South America. *Hanekom 1817.*

W S C N E

Senecio L. (s. Afr.: 302 spp.)

9411000

Harvey. 1865. F.C. 3: 346–408.

Klatt. 1896. Bull. Herb. Boissier 4: 469 & 842.

Muschler. 1909. Bot. Jb. 43: 59–60.

Moore. 1918. J. Bot., Lond. 56: 7–8.

Moore. 1921. J. Bot., Lond. 59: 231.

Hutchinson & Burtt Davy. 1937. Kew Bull. 1936: 81–82.

Henderson. 1957–58. Flower. Pl. Afr. 32: t. 1254.

Compton. 1967. J. S. Afr. Bot. 33: 300–301.

Merxmüller. 1967. F.S.W.A. 139: 162.

Hilliard. 1977. Compositae in Natal: 387–502, 640.

Hilliard & Burtt. 1986. Notes R. bot. Gdn Edinb. 43,3: 352–353.

Jeffrey. 1986. Kew Bull. 41,4: 903.

achilleifolius DC.

Prostrate, decumbent or ascending shrub. Leaves loosely woolly at first, soon glabrous, pinnatisect or bipinnatisect. Vegetative and inflorescence branches virgate (straight and rod-like). Heads radiate. Ovaries (and achenes) glabrous. *Flowers bright canary-yellow; March to May and November to December.* Rocky streambeds and along streams rooted in rock crevices, damp hollows. *Sutton 1227.*

W S C N E

adnatus DC.(= *S. pauciligulatus* R.A. Dyer & C.A. Sm.)

Perennial herb, up to 1 m high. Leaves glabrous, lanceolate to oblong-lanceolate. Heads radiate or rarely discoid. Involucral bracts 4 or 5, 7–10 mm long. Ovaries (and achenes) glabrous. *Flowers bright yellow; December to January.* Grassland. *Codd 8140.*

W S C N E

affinis DC.(= *Hertia natalensis* O. Hoffm. ex Kuntze)

Perennial herb, up to 1 m high. Leaves glabrous or rarely thinly cottony, radical and cauline; radical leaves petiolate; cauline leaves sessile, shortly decurrent; leaf margins closely and minutely callose-denticulate. Heads radiate. Involucral bracts shorter than pappus of disc flowers. Ovaries (and achenes) glabrous. *Flowers bright yellow; November to March*. Open grassland. *Brusse 4992*.

W S C N E

albanensis DC. var. albanensis(= *S. leiocarpus* DC.)

Perennial herb, up to 1 m high. Leaves lanceolate to linear, margin callose-denticulate, radical leaves petiolate, cauline leaves sessile; glabrous or cobwebby. Heads radiate, involucral bracts 15–20, rays 10–15. Achenes glabrous. *Flowers yellow; November to February*. Grassland among rocks, often vleis or marshy areas. *Devenish 1096*.

W S C N E

anomalochrous Hilliard

Perennial herb, up to 1 m high. Leaves mostly radical, linear to lanceolate, margins minutely and closely callose-crenulate. Wisps of white cobwebby indumentum in leaf and bract axils and at base of involucre. Heads discoid. Ovaries hirsute. *Flowers dull purple; October and December*. Grassland, often among rock outcrops or in crevices of rock sheets. *Bredenkamp 619*.

W S C N E

apiifolius (DC.) Benth. & Hook. f. ex C. Hoffm.

Annual herb, up to 1.5 m high. Leaves lanceolate to elliptic in outline, deeply dentate, lobed or pinnate, glabrous. Heads solitary, radiate. Achenes sparsely papillose on ridges. *Flowers yellow; July to June*. In grassland, often at edges of pans and vleis; becoming a weed in disturbed places. *Codd 10381*.

W S C N E

arenarius Thunb.(= *S. elegans* Thunb.,
= *S. myrrhifolius* Thunb.)

Viscose-pubescent annual herb, up to 500 mm tall. Leaves polymorphic: oblong or obovate, subentire or toothed, lyrate, pinnatifid or bipinnatifid with cuneate, toothed or incised lobes, auriculate at base. Inflorescence laxly corymbose. Involucre nude at base or nearly so. Heads radiate, with 12 or 13 involucral bracts and 6 or 7 rays. Achenes puberulous on striae. *Flowers with mauve rays and yellow disc; April*. *Van Wyk 1501*.

W S C N E

asperulus DC.

Perennial herb, up to 0.6 m high. Leaves radical and cauline; radical leaves in basal rosette, tips acute or acuminate, margins entire or callose-toothed; cauline leaves similar but smaller. Heads discoid. Involucral bracts equalling disc flowers. Ovaries and achenes

white hispid. *Flowers bright yellow; October to February and in May*. Poor sandy soil, readily becoming a weed along roadsides. *Acocks 20844*.

W S C N E

barbatus DC.(= *S. thyrsoides* DC.)

Perennial herb, up to 300 mm tall. Leaves radical and cauline. All parts clothed in long, soft, shaggy, gland-tipped hairs. Flowering stems closely leafy; heads discoid, in congested racemose panicles. Achenes hairy. *Flowers whitish, yellowish, purple or blue; September to December*. Grassland. *Leistner 514*.

W S C N E

barbertonicus Klatt

Scandent succulent shrub, 1–2 m high. Leaves terete, slightly curved. All parts glabrous. Heads discoid. Involucral bracts 11–13 mm long. Achenes hispid between ribs. *Flowers bright yellow; May to December*. Dry sandy areas among rock outcrops. *Krynauw 1246*.

W S C N E

bupleuroides DC.

Perennial herb, 0.25–0.75 m high. Crown and lowest nodes woolly, wool hidden deep in leaf axils. Leaves glabrous, cauline, 3–(–7), 10 times or more as long as broad, margins entire or distantly callose-denticulate. Heads radiate, rays 5 (rarely 6), 4–5 mm long. Ovaries and achenes glabrous. *Flowers bright yellow; September to February*. Grassland. *Devenish 123*.

W S C N E

caudatus DC.

Perennial herb, 0.25–0.70 m high. Leaves glabrous or thinly hairy on upper surface and midrib below. Heads radiate, rays 13–19; involucral bracts ± 20, 11–14 mm long, ± equalling pappus of disc flowers. Ovaries and achenes glabrous or sparsely hairy. *Flowers bright yellow; August to December and in April*. Marshy ground, marshes or sometimes in running water. *Devenish 770*.

W S C N E

conrathii N.E. Br.(= *S. pachythesis* E. Phillips & C.A. Sm.)

Perennial herb, up to 1.5 m high. Stems and leaves initially with white cobwebby indumentum, persisting as wisps in leaf axils. Heads radiate, rarely discoid. Involucral bracts 16–20, (6.5–)8.0(–9.0) mm long. Ovaries and achenes glabrous. *Flowers bright yellow; November to March*. Grassland. *Devenish 423*.

W S C N E

consanguineus DC.

Herb, up to 1 m high. Leaves pinnatisect, glandular-pubescent. Heads radiate, rays 6–8(–11); involucral bracts ± 14, 7.5–8.0 mm long. Achenes (and ovaries) hispidulous between ribs. *Flowers bright yellow; April to November*. Riverbanks but has become a troublesome weed of cultivation. *Hanekom 2307*.

W S C N E

coronatus (Thunb.) Harv.
(= *Cineraria coronata* Thunb.)

Perennial herb, up to 0,75 m high. Crown clothed in long silky-woolly hairs. Leaves lightly cobwebby, glabrescent, leaf margins minutely callose-denticulate. Involucral bracts (7–)8–10 mm long. Heads radiate. Achenes and ovaries hairy. *Flowers bright yellow; July to June.* Grassland. *Codd 2116.*

W S C N E

debilis Harv.

Perennial subshrub. Leaves narrowly linear, glabrous. Heads solitary on long, filiform peduncles, radiate, rays 10–12; involucral bracts 18–20. Achenes puberulous. *Flowers yellow; October.* Fries 5364.

W S C N E

decurrens DC.

Herb, up to 1 m high. Leaves glabrescent on upper surface, often persistently cobwebby below; decurrent in long stem wings. Heads radiate, rays 8, 10–20 mm long. Involucral bracts (8–)10–12 mm long. Ovaries and achenes glabrous or sparsely hispidulous between ribs. *Flowers bright yellow; December to January.* Open grassland. *Sidey 1967.*

W S C N E

deltoides Less.

Herbaceous scrambler. Ultimate branchlets zigzag. Leaves deltoid to deltoid-hastate, margins irregularly dentate or denticulate. Heads discoid or radiate. Involucral bracts 5–8, 3–4 mm long. *Flowers bright yellow; March to April and July to September.* Forest margins. *Stalmans 115.*

W S C N E

digitalifolius DC.

Herb, up to 1,5 m high. Leaves glabrous or cobwebby; cauline leaves decurrent on stem in conspicuous wings. Heads radiate, rays $\pm$ 13; involucral bracts $\pm$ 20, 7–8 mm long. Ovaries and achenes glabrous. *Flowers bright yellow; October to April.* Open grassland. *Codd 6387.*

W S C N E

discodregeanus Hilliard & B.L. Burt
(= *S. dregeanus* DC. var. *discoideus* DC.)

Perennial herb, up to 1 m high. Wisps of white cobwebby indumentum in leaf and bract axils and on involucre. Leaf margins callose-denticulate. Heads discoid. Achenes glabrous. *Flowers dull deep violet; November to December and in March.* Grassland. *Wilms 6444.*

W S C N E

eminens Compton

Perennial herb, up to 1,2 m high. Basal leaves lanceolate, petiolate, margin minutely bluntly cartilaginous-dentate; cauline leaves smaller, sessile, glabrous. Heads discoid, involucral bracts $\pm$ 21, $\pm$ 20 mm long. *Flowers whitish; March.* Grassland. *Sidey 1612.*

W S C N E

erubescens Aiton var. **erubescens**

(= *S. erubescens* Aiton var. *dichotomus* DC.)

Erect or decumbent perennial herb, 0,2–0,6 m high. Leaves densely and softly glandular-pubescent. Flowering stem characteristically forking near base. Heads discoid, campanulate, corymbose-paniculately arranged. Involucral bracts 16–20, 7–9 mm long. Achenes hispidulous between ribs. *Flowers purple or mauve; September to February and in June.* Grassland. *Codd 5670.*

W S C N E

erubescens Aiton var. **crepidifolius** DC.

Decumbent or erect perennial herb, up to 1 m high. Leaves densely glandular pilose, margins coarsely toothed to denticulate. Heads discoid, campanulate, $\pm$ racemously arranged. Involucral bracts 18–20, 6,5–8,0 mm long. Achenes hispidulous between ribs. *Flowers purple or mauve; September to June.* Open grassland. *Codd 2306.*

W S C N E

evelyniae Muschl.

Shrub, up to 1 m high. Leaves sessile, pinnatifid, ultimate lobes linear. Heads radiate. Involucral bracts $\pm$ 12. *Flowers pale yellow; May to July and in November.* Grassland. *Rogers 18664.*

W S C N E

gerrardii Harv.

Perennial herb, up to 2 m high. Lower cauline leaves $\pm$ abruptly contracted to a narrow, winged, petiole-like base, then expanded into 2 large rounded toothed auricles, margins coarsely and irregularly toothed, scabrid-pubescent. Heads discoid. Achenes glabrous. *Flowers purple; December to August.* Forest margin scrub or damp marshy hollows. *Codd 8421.*

W S C N E

glaberrimus DC.

(= *S. inophyllus* E. Phillips & C.A. Sm.)

Perennial herb, up to 0,6(–0,9) m high. Crown and lowest nodes woolly, wool hidden deep in leaf axils. Leaves glabrous. Heads radiate or discoid, rays 5, sometimes fewer or wanting, rarely 8. Involucral bracts 3,5–5,0 mm long, 6–8(–10). Achenes and ovaries glabrous. *Flowers bright yellow; September to January.* Grassland. *Codd 3213.*

W S C N E

glanduloso-pilosus Volken & Muschl.

(= *S. serratus* (Thunb.) Sond.)

Perennial herb, up to 0,6 m high. Leaves in a basal rosette with short, stiff, harsh glandular hairs, narrowly elliptic, margins coarsely and irregularly toothed. Heads discoid. Involucral bracts 12–14, 6,5–10,0 mm long. Achenes and ovaries hispid between ribs. *Flowers purple or dull yellow; September to February.* Open grassland. *Codd 4352.*

W S C N E

gregatus Hilliard

(= *S. serratuloides* DC. var. *gracilis* Harv.,
= var. *rehmannii* Thell.,
= var. *dietterlenii* Thell.,
= var. *holubii* Thell.)

Perennial herb, up to 1 m high. Leaves lanceolate to narrowly linear-elliptic, glabrous, margins regularly serrulate. Heads radiate, rays 8–13, involucre bracts 12, 3.0–3.5 mm long. Achenes and ovaries glabrous. *Flowers yellow; February to July*. On streambanks, often growing in water. *Turner 723*.

W S C N E

harveianus MacOwan

Perennial herb, up to 1 m high. Leaves linear, glabrous. Heads radiate, rays $\pm$ 13, involucre bracts $\pm$ 20, (5–)6–7(–9) mm long, calyculus bracts in 3 or 4 series, bracts overlapping, innermost $\pm$ a third to half as long as involucre. Achenes hispid between ribs. *Flowers canary-yellow; September to January and April to May*. Grassy mountainsides. *Devenish 869*.

W S C N E

helminthioides (Sch. Bip.) Hilliard

(= *S. quinquelobus* (Thunb.) DC. var. *helminthioides* Sch. Bip.)

Twining herb. Leaves ovate-deltoid in outline, shallowly and acutely lobed or toothed. Heads discoid. Calyculus bracts foliaceous. Involucre bracts 12, 10–11 mm long. Achenes hispid between ribs. *Flowers yellow or orange; December and March to June*. Forest margins or in scrub or woodland; often rather dry situations. *Codd 7955*.

W S C N E

hieracioides DC.

(= *S. johannesburgensis* S. Moore)

Glandular-pubescent perennial herb, up to 350 mm tall, with tuft of radical leaves. Heads radiate. Involucre bracts glandular-pubescent, 6.0–7.5 mm long. Achenes and ovaries hispid. *Flowers bright yellow; July to June*. In poor grassland and among rocks, often becoming a weed along roadsides. *Devenish 1049*.

W S C N E

hochstetteri Sch.Bip. ex A. Rich.

Possibly perennial herb. Flowers appearing with or after leaves. Heads discoid, corollas up to 10 mm long. Involucre 4.5–12.0 $\times$ 2.5–6.0 mm, 2.5–4.0 mm in diameter, or if 4.5–5.0 mm in diameter then 8 mm long. Ovaries and achenes hairy. *Flowers white or cream*. No specimens in PRE.

holubii Hutch. & Burtt Davy

Possibly perennial herb, up to 400 mm tall. Leaves glabrous or sparsely albo-tomentose, 40–50 mm long, linear, obtuse, base auriculate, amplexicaul, margins distantly sinuate-dentate. Inflorescence subcorymbose. Heads solitary, discoid. Involucre bracts 12–15, $\pm$ 6 mm long. Achenes scabrid on ribs. No specimens in PRE.

W S C N E

inaequidens DC.

(= *S. burchellii* DC. p.p.)

Perennial herb, up to 1 m high. Leaves glabrous, stems uniformly leafy. Heads radiate, rays 13; involucre bracts 20, (4–)5(–7) mm long, calyculus bracts few, not overlapping, much shorter than involucre. Achenes hispid between ribs. *Flowers canary-yellow; July to June*. Among rock outcrops on steep, moist, grassy mountainsides and along rocky watercourses, becoming a weed in disturbed places. *Van Vuuren 1265*.

W S C N E

inornatus DC.

(= *S. fraudulentus* E. Phillips & C.A. Sm.,
= *S. serra* Sond.)

Perennial herb, up to 1.8 m high. Leaves glabrous or with traces of cobwebby wool or minutely puberulous below, leaf bases often decurrent in broad or narrow stem wings. Heads radiate, rays 5, involucre bracts 10–12, (4.0–)4.5–5.5(–7.0) mm long. Achenes and ovaries glabrous. *Flowers bright yellow; July to June*. Grassland. *Codd 2673*.

W S C N E

isatideus DC.

Perennial herb, up to 1.5 m high. Crown and basal nodes woolly. Leaves oblong-obovate, obtuse, glabrous. Heads discoid. Involucre bracts 4 or 5, (5–)7 mm long. Achenes and ovaries glabrous. *Flowers bright yellow; November to March*. Grassland. *Codd 2676*.

W S C N E

isatidioides E. Phillips & C.A. Sm.

(= *S. isatideus* DC. var. *macrophyllus* Thell.,
= *S. macrophyllus* E. Phillips)

Perennial herb, up to 2.4 m high. Crown and leaves glabrous. Side veins briefly ascending then spreading almost at right angles to midrib before looping upwards near margin. Heads discoid. Involucre bracts 4 or 5, 7–9 mm long. Ovaries glabrous. *Flowers bright yellow; December to March*. Forest margin or other damp situations. *Welman 448*.

W S C N E

junodii Hutch. & Burtt Davy

Subshrub, up to 1 m high. Leaves glabrous, lanceolate, petiolate, margin serrulate. Heads in lax corymbs, radiate; involucre bracts 6 mm long. *Flowers pale yellow; January to May*. Grassland on mountainsides and rocky outcrops. *Codd 7877*.

W S C N E

laevigatus Thunb. var. laevigatus

(= *S. plebeius* DC.)

Annual herb, up to 500 mm tall. Lower leaves pinnatifid, upper linear, glabrous. Heads solitary, radiate. Achenes pubescent. *Flowers yellow; September to April*. Grassland, often near water or vleis, can become a weed in disturbed places. *Codd 10130*.

W S C N E

laevigatus Thunb. var. **integrifolius** Harv.

Annual herb, up to 0,6 m high. Leaves undivided, linear, glabrous. Heads solitary, radiate. Achenes pubescent. *Flowers yellow; January to October*. Grassland, often in wet areas; becoming a weed in disturbed places. *Theron 2356*.

W	S	C	N	E
---	---	---	---	---

latifolius DC.

(= *S. sceleratus* Schweick.)

Perennial herb, up to 1 m high. Crown and lowest nodes woolly, wool hidden deep in leaf axils. Stems $\pm$ uniformly leafy, up to inflorescence branches. Leaves glabrous. Heads radiate, rays 5; involucre bracts 7 or 8, (4,0–)5,5–6,0(–7,0) mm long. Achenes and ovaries glabrous. *Flowers bright yellow; July to June*. Grassland or open woodland. *Scheepers 457*.

W	S	C	N	E
---	---	---	---	---

latissimifolius S. Moore

Radical leaves sessile, spatulate-obovate, apex emarginate, basally araneose, rest glabrous or puberulous, margin dentate or dentate-undulate; cauline leaves obovate-subpanduriform, base amplexicaul, basal part araneose. Heads radiate, in a corymb. Involucre bracts 20, 8 mm long; rays 9, 12,5 mm long. *Flowers yellow. Anon.*

W	S	C	N	E
---	---	---	---	---

lydenburgensis Hutch. & Burt Davy

(= *Hertia kuntzei* O. Hoffm. ex Kuntze,
= *S. verdoorniae* R.A. Dyer)

Perennial herb, up to 1,3 m high. Crown silky woolly. Leaves thinly woolly or cobwebby, sometimes glabrescent or hairs persisting at base; stem leaves oblong or elliptic-lanceolate; leaf margins closely and minutely callose-denticulate. Heads radiate, rays (5–)8; involucre bracts $\pm$ 12, 6–7 mm long. Achenes and ovaries villous. *Flowers bright yellow; October to May*. Grassland. *Codd 2568*.

W	S	C	N	E
---	---	---	---	---

lygodes sensu Hilliard

Perennial herb, up to 1 m high. Crown of plant not woolly. Leaves elliptic to lanceolate, glabrous; at least some leaves decurrent on stem in broad or narrow wings reaching nearly or quite to node below. Heads several to many in corymbose panicle. Involucre bracts 12–16, 5,5–7,0 mm long. Heads radiate, rays 8(11), much exceeding disc flowers. Ovaries and achenes glabrous. *Flowers bright yellow; January to April and July to August*. Along streamsides or on soggy grass tussocks in marshes. *Devenish 1121*.

W	S	C	N	E
---	---	---	---	---

macrocephalus DC.

(= *S. gyrophyllus* Klatt)

Decumbent then erect perennial herb, up to 400 mm tall. Leaves shortly glandular-pubescent, sometimes lightly cobwebbed below at first; radical leaves narrowed to base but scarcely petioled, margins entire,

repand or shallowly toothed. Heads radiate, rays 12 or 13(–18); involucre bracts 16–20, (10–)12(–15) mm long. Achenes with long white hairs. *Flowers deep pink to purple; September to November and in April*. Open grassland. *Muller & Scheepers 228*.

W	S	C	N	E
---	---	---	---	---

macroglossoides Hilliard

Twining herb. Leaves deltoid-ovoid in outline with 3–5 acute lobes on either side, margins of lobes straight or slightly concave. Heads radiate or rarely discoid, rays 8; involucre bracts 12, 10–13 mm long. Achenes glabrous. *Flowers yellow; April to June*. Forest margins. *Van der Schijff 4453*.

W	S	C	N	E
---	---	---	---	---

macroglossus DC.

Twining herb. Leaves deltoid-hastate in outline with 3 main lobes, the 2 lower lobes sometimes with a smaller tooth on lower margins. Heads radiate, rays 8; involucre bracts 12, 9–10 mm long. Achenes glabrous. *Flowers with creamy or buttery yellow rays, disc yellow; October and February*. Forest margins, particularly in rocky places. *Buitendag 881*.

W	S	C	N	E
---	---	---	---	---

madagascariensis Poir.

Glabrous or very sparsely hairy annual herb, up to 300 mm tall. Heads radiate, rays 13; involucre bracts 20, 4–5(–6) mm long. Ovaries and achenes hispid between ribs. *Flowers canary-yellow; September to November and in February and May*. Weed of cultivation. *James jnr. 126*.

W	S	C	N	E
---	---	---	---	---

mbuluzensis Compton

Perennial herb, up to 1,5 m high. Leaves lanceolate, margins finely callose-serrulate, ciliate, upper leaf surface glabrous, lower with pilose midrib and sparse hairs on secondary veins. Heads radiate, rays 8; involucre bracts 12–14, 13–16 mm long. Ovaries and achenes glabrous. *Flowers bright yellow; October to January*. On mountains in scrub on forest margins. *Codd 8171*.

W	S	C	N	E
---	---	---	---	---

medley-woodii Hutch.

Shrub, up to 1,5 m high. Leaves obovate, succulent, both surfaces white-felted, glabrescent, margins entire to coarsely and irregularly toothed in upper half. Heads radiate, rays $\pm$ 13; involucre bracts $\pm$ 12, 12–15 mm long. Achenes and ovaries glabrous. *Flowers bright yellow; August*. Scrubby growth on cliff-edges. *Fourie 2158*.

W	S	C	N	E
---	---	---	---	---

microglossus DC.

(= *S. cupulatus* Volkens & Muschl.)

Perennial herb, up to 1,2 m high. Leaves glabrous, lyrate-pinnatifid, triplinerved. Heads radiate, rays 5(–7), short; involucre bracts 8, 3,5–4,0 mm long.

Achenes and ovaries glabrous. *Flowers yellow; June to March*. Grassland. *Marais 309*.

W S C N E

mooreanus Hutch. & Burt Davy

Perennial herb, up to 0,6 m high. Stems thinly pilose with long white spreading hairs. Radical leaves oblanceolate, apex obtuse, margins irregularly callose-serrate or serrulate. Heads discoid, involucre bracts 16–20, 9–12 mm long. Achenes and ovaries hispid between ribs. *Flowers yellow; October and January*. Open grassland, often in damp situations. *Mogg 17161*.

W S C N E

othonniflorus DC.

(= *Brachyrhynchos eupatorioides* Less.,
= *Doria denticulata* Thunb.)

Perennial herb, up to 0,6(–1,0) m high. Crown of plant and leaf axils woolly. Leaves oblong or lanceolate-oblong, glabrous. Heads discoid, involucre bracts 12(–16), 8,5–11,0 mm long. Achenes and ovaries glabrous. *Flowers bright yellow; September to February and in June*. Grassland, often on steep slopes and among rock outcrops. *Acocks 20841*.

W S C N E

oxyriifolius DC.

(= *S. orbicularis* Sond. ex Harv.)

Glabrous, succulent perennial herb, up to 1 m high. Leaves orbicular to deltoid in outline, ± peltate; petioles long, terete. Heads discoid, involucre bracts 8(–10), (7–) 8–10(–12) mm long. Achenes and ovaries generally hispid between ribs, rarely glabrous. *Flowers bright yellow; June to July*. Grassland among rock outcrops. *Venter 1189*.

W S C N E

panduriformis Hilliard

(= *S. pandurifolius* Harv.)

Herb, up to 2,4 m high. Leaves panduriform, persistently cobwebby-cottony below, margins dentate to denticulate. Heads discoid. Achenes and ovaries glabrous. *Flowers yellow; November to December and March to June*. In scrub on forest margins. *Codd 7903*.

W S C N E

paucicalyculatus Klatt

(= *S. launayaefolius* O. Hoffm.)

Perennial herb, up to 1 m high. Leaves radical, crowded in a rosette, mostly obovate, glabrous except for woolly crown and wool hidden in leaf axils. Involucre bracts 8–12, 6,0(–7,5) mm long; rays (5–)8. Achenes and ovaries glabrous. *Flowers bright yellow; November to February*. Grassland in black peaty waterlogged soil. *Turner 1183*.

W S C N E

pentactinus Klatt

Glabrous herb, up to 1 m high. Leaves petiolate, lanceolate, callose-dentate. Heads radiate, rays 5; involucre bracts 12. *Flowers with yellow or white rays; Novem-*

ber to April. Grass- or shrubland on slopes or valleys. *Stalmans 345*.

W S C N E

pleistocephalus S. Moore

Scandent succulent herb. Leaves elliptic, margins entire, repand, crenate-serrate or denticulate, glabrous. Heads discoid, involucre bracts 5, shorter than 5 mm. Achenes glabrous or hispid between ribs. *Flowers yellow; December and March to July*. Clambering on forest margins in dry river valleys. *Zambatis 1607*.

W S C N E

polyanthemoides Sch. Bip.

Annual herb, up to 1,8 m high. Leaves lanceolate, narrowed into petiole-like base, margins entire, sharply serrate or more deeply pinnately divided; upper surface smooth or scabrid, lower thinly white-felted. Heads radiate, rays 8; involucre bracts 16–20, 4(–5) mm long. Achenes and ovaries minutely puberulous. *Flowers canary-yellow; July to June*. On forest margins; also weed along roadsides, in old fields and felled plantations. *Muller & Scheepers 219*.

W S C N E

polyodon DC. var. **polyodon**

Perennial herb, up to 0,75 m high. Radical leaves rosetted, spatulate or elliptic, petiolate, margins coarsely toothed to sinuate-denticulate, both surfaces glandular pubescent; cauline leaves similar but smaller. Heads discoid, involucre bracts 12–20, 4–5 (–7) mm long. Achenes hispid between ribs. *Flowers whitish or pale violet to purple, sometimes becoming yellowish; September to January and in June*. Along marshy streambanks, in marshes or in seasonally waterlogged grassland. *Codd & De Winter 3296*.

W S C N E

polyodon DC. var. **subglaber** (Kuntze) Hilliard & B.L.

Burt

(= *S. concolor* DC. var. *subglaber* O. Hoffm. ex Kuntze)

Perennial herb, up to 0,75 m high. Same as var. *polyodon* but heads radiate, rays (8–)12–13(–18). *Flowers with mauve, magenta or bluish rays, disc as in var. polyodon; September to January*. Habitat same as var. *polyodon*. *Hilliard & Burt 9142*.

W S C N E

radicans (L.f.) Sch. Bip.

(= *Cacalia radicans* L.f.,
= *Kleinia radicans* (L.f.) Harv.)

Prostrate succulent herb. Leaves terete, glabrous. Heads discoid; involucre bracts 12–14, 9–14 mm long. Ovaries hairy. *Flowers white; October to December and April to June*. Dry scrub country, forming mats on bare or stony ground. *Repton 3539*.

W S C N E

reptans Turcz.

Perennial herb, up to 100 mm tall. Radical leaves linear-oblong, obtuse, inciso-dentate or subpinnatifid,

petiolate, glabrous; cauline leaves smaller, sessile. Heads solitary, radiate; involucre bracts 18–20. Achenes puberulous. *Flowers yellow; July to March*. Edges of pans or in vleis. *Codd 3432*.

W S C N E

rhomboideus Harv.

(= *S. dieterlenii* E. Phillips)

Perennial herb, up to 1 m high. Leaves rhomboid or obovate, tapering to a broad, flat, petiole-like, half-clasping base, fleshy, glabrous. Heads discoid, involucre bracts 10–12, (8,0–)9,5–10,0 mm long. Achenes and ovaries hispid between ribs. *Flowers bright yellow; December to January and in April*. Grassland, often among rock outcrops, or on margins of scrubby growth. *Codd & Dyer 9025*.

W S C N E

rhyncholeus DC.

(= *S. pseudo-rhyncholeus* Thell. var. *auriculatus* Thell.)

Perennial herb, up to 0,6 m high. Leaves bipinnatisect or bipinnatifid, base narrowed, petiole-like. Heads discoid, $\pm 10 \times 5$ mm; involucre bracts and peduncles with mostly sessile or very short-stalked glands, sometimes with a few jointed hairs as well. Achenes hispid between ribs. *Flowers white with mauve anthers; January and April*. Grassland, rock outcrops on hillsides. *Brusse 5054*.

W S C N E

ruwenzoriensis S. Moore

(= *S. othoniiformis* Fourc.,
= *S. paucifolius* DC.)

Perennial herb, up to 0,75 m high. Leaves somewhat fleshy, glabrous, narrowly to broadly elliptic, triplinerved, margins entire or distantly callose-denticulate. Heads radiate, rays 8–10; involucre bracts 10–12, (6,0–)7,5–(10,0) mm long. Achenes and ovaries glabrous. *Flowers bright yellow; October to April*. Grassland, particularly around rock outcrops. *Codd 4803*.

W S C N E

scitus Hutch. & Burt Davy

Perennial herb, up to 0,6 m high. Leaves 3–6, passing abruptly into inflorescence bracts, glabrous except for woolly crown and woolly hairs hidden in leaf axils. Heads radiate, rays 8, rarely 5 or 6, occasionally 10; involucre turbinate-campanulate, bracts (10–)12–16, (4–)5–6 mm long. Achenes and ovaries glabrous. *Flowers bright yellow; April to January*. Grassland. *Codd 8045*.

W S C N E

scoparius Harv.

(= *S. colensoensis* O. Hoffm. ex Kuntze)

Perennial herb, up to 1 m high. Leaves ovate or ovate-lanceolate, subsessile, margins callose-serrulate, glabrous or young ones cobwebbed. Heads radiate, rays 5 or 6, involucre bracts 10–13. Achenes hispidulous. *Flowers yellow; December*. Rocky hillsides. *Prosser 1994*.

W S C N E

serratuloides DC.

(= *S. serratuloides* DC. var. *glabratus* DC.)

Perennial herb, up to 1 m high. Leaves lyrate-pinnatifid, lower surface thinly cobwebby with few long gland-tipped hairs on veins. Heads radiate, rays 8–13; involucre bracts 12, 3,0–3,5 mm long. Achenes and ovaries glabrous. *Flowers yellow; March to June*. Grassland or open woodland. *Scheepers 974*.

W S C N E

speciosus Willd.

(= *S. concolor* DC.)

Perennial herb, up to 0,7 m high. Radical leaves mostly rosetted, glandular-pubescent, glabrous or lightly cobwebby below, with long, broad, flat petiole, margins deeply lobed or toothed. Heads radiate, rays 8–12–14(–20); involucre bracts 16–20, (9–)10(–12) mm long. Achenes pubescent between ribs. *Flowers deep pink to purple; September to March*. Damp situations such as damp grassland or marshy depressions. *Codd 8218*.

W S C N E

striatifolius DC.

Perennial herb, up to 0,6 m high. Stem leaves linear, tapering to long, acute apex, with traces of wool, margins closely and minutely callose-denticulate. Heads discoid or radiate, rays 8; involucre bracts 16–20, 6 mm long. Achenes and ovaries villous. *Flowers bright yellow; October to January*. Grassland. *Jacobsen 1147*.

W S C N E

subcoriaceus Schltr.

(= *S. basutensis* Thell.)

Perennial herb, up to 300 mm tall. Leaves mostly radical, pressed flat on the ground, subrotund to broadly spatulate or rhomboid; narrowed to a short, flat, broad, petiole-like base, veins several from base, ascending and $\pm$ parallel, both leaf surfaces thinly pilose, some hairs gland-tipped. Heads discoid, involucre bracts 16–20, 6 mm long. Achenes white hispid between ribs. *Flowers whitish or dull yellow, ageing brown, sometimes tips of lobes dull blue; September to March*. Short stony grassland. *Devenish 1475*.

W S C N E

subrubriflorus O. Hoffm.

(= *S. pseudo-rhyncholeus* Thell. excl. var. *auriculatus* Thell.,
= *S. viscidus* N.E. Br.)

Perennial herb, up to 0,6 m high. Radical leaves glandular-pubescent, pinnatifid, lobes $\pm$ oblong, margins coarsely toothed or lobed, petiolate. Heads discoid, involucre bracts 8–12, 6–8 mm long. Achenes hispid between ribs. *Flowers pale mauve, white or deep yellow; December to June*. Rocky, grassy mountainsides. *Welman 320*.

W S C N E

tamoides DC.

Twining herb. Leaves $\pm$ deltoid in outline, unequally lobed, lobes deltoid, base hastate or cuneate, petiolate; thinly hairy below or glabrous. Heads radiate, rays 5;

involucral bracts 6–8, 8–9 mm long. Achenes glabrous. *Flowers bright yellow; October to June.* Climbs on forest margins. *Codd 10059.*

W S C N E

trifurcatus Klatt

Herb, up to 360 mm tall. Leaves obovate, amplexicaul, margin dentate; pilose. Heads radiate, rays 12; involucral bracts 10 mm long. *Flowers orange-yellow; April to June.* Hillsides. *De Souza 451.*

W S C N E

urophyllus Conrath

Perennial herb, 0.25–0.75 m high. Leaves 7–13, linear-lanceolate, margins finely spinose-toothed, often revolute between teeth, glabrous, except for crown and lowest nodes which are woolly. Heads radiate, rays 5; involucral bracts 8, 5–6 mm long. Achenes glabrous. *Flowers bright yellow; November to January.* Grassland in damp places. *Smith 1623.*

W S C N E

venosus Harv.

Perennial herb, up to 1 m high. Leaves glabrous, lanceolate to oblong-lanceolate, base cordate, sessile, margins closely callose-denticulate. Heads discoid or radiate, rays 5–7; involucral bracts 8, 4.5–7.0 mm long. Achenes glabrous. *Flowers bright yellow; September to June.* Grassland. *Codd 3446.*

W S C N E

viminalis Bremek.

Scandent succulent shrub. Leaves spatulate to suborbicular, glabrous. Heads discoid, involucral bracts 5, 10–12 mm long. Achenes glabrous. *Flowers white; November to January.* Woodland or scrub. *Codd 8378.*

W S C N E

vimineus DC.

Shrub, up to 0.8 m high. Leaves narrow-linear, entire, stem-clasping, glabrous. Heads radiate, rays 10–12; involucral bracts subbiseriate, 30, oblong-acuminate. Rays $\pm$ 12, 4 mm long, scarcely longer than disc flowers. Achenes puberulous. *Flowers yellow, rarely white; July to June.* Grassland. *Vahrmeijer 2436.*

W S C N E

waterbergensis S. Moore

Plant glabrous. Leaves sessile, pinnatifid, segments oblong or linear-obtuse. Heads radiate, many in a corymb. Involucral bracts subbiseriate, 30, oblong-acuminate. Rays $\pm$ 12, 4 mm long, scarcely longer than disc flowers. Achenes puberulous. *Flowers yellow.* No specimen in PRE.

W S C N E

Sigesbeckia L. (s. Afr.: 1 sp.)

9160000

Hilliard. 1977. *Compositae in Natal*: 300–302.

orientalis L.

Annual herb, up to 1 m high. Stems and leaves pubescent. Leaves petiolate or subsessile, narrowly to broadly ovate, sometimes bilobed towards base, margins coarsely and irregularly toothed. Involucral bracts linear-spathulate, with spreading gland-tipped hairs. *Flowers yellow; January to June and in October.* Weed on forest margins or as weed of cultivation. *Scheepers 314.*

W S C N E

Silybum Adans. (s. Afr.: 1 sp.)

9464000

Hilliard. 1977. *Compositae in Natal*: 579–580.

marianum (L.) Gaertn.*

(= *Carduus marianus* L.)

Annual or biennial herb, up to 2 m high. Leaves oblong in outline, sinuate-lobate or pinnatifid, undulate, margins spiny, glabrous, marbled with white along veins above. Heads solitary, urceolate. Involucral bracts spine-tipped and spinose-ciliate at base, spreading or basal ones recurved. *Flowers purple; November.* Weed of cultivation and waste places. Native to southern Europe, North Africa, Caucasus and the Near East. *Leendertz 6225.*

W S C N E

Solanecio (Sch. Bip.) Walp. (s. Afr.: 1 sp.)

9411110

Hilliard. 1977. *Compositae in Natal*: 372.
Jeffrey. 1986. *Kew Bull.* 41.4: 920–923.

angulatus (Vahl) C. Jeffrey

(= *Crassocephalum bojeri* (DC.) Robyns,
= *C. subscaudens* (A. Rich.) S. Moore)

Liane or scandent shrub. Leaves pinnately divided, glabrous or almost so. Heads in compact, rounded, trichotomous corymbs. Ovaries and achenes white-pilose between ribs. *Flowers yellow; April.* Forest edge or bush. *Netshungani 878.*

W S C N E

Sonchus L. (s. Afr.: 9 spp.)

9595000

Hilliard. 1977. *Compositae in Natal*: 622–628.
Pope. 1992. *F.Z.* 6.1: 221–229.

asper (L.) Hill subsp. asper*

(= *S. oleraceus* L. var. *asper* L.,
= *S. gigas* Boulos ex Humbert)

Annual or perennial herb, up to 1.5 m high. Achenes strongly compressed with broad marginal wings; shorter than 3 mm. Leaves oblanceolate-panduriform, seldom pinnatifid, basal auricles rounded and appressed. *Flowers pale yellow; July to February and in May.* Weed of cultivation and roadsides. Native to Europe and Asia. *Stalmans 309.*

W S C N E

dregeanus DC.

(= *S. ecklonianus* DC.)

Perennial herb, up to 400 mm tall. Leaves in a basal rosette. Involucre white-woolly at base and outer bracts usually beset with fleshy setae. Peduncles remotely leafy or with large bracts, bearing up to 5 heads. Achenes slightly compressed, margins thickened; smooth. *Flowers yellow, pink or reddish; October to July.* Open grassland. *Acoks 20826.*

W S C N E

integrifolius Harv. var. integrifolius

Perennial herb, up to 400 mm tall. Leaves sometimes crowded towards base, but peduncles remotely leafy upwards, broad—up to 120 × 30 mm. Involucre glabrous at base, ± 20 mm long. Achenes slightly compressed, margins thickened, smooth. *Flowers yellow, pink or reddish; November to March.* Open grassland, invading disturbed areas. *Jacobsen 2373.*

W S C N E

integrifolius Harv. var. schlechteri R.E. Fr.

Perennial herb, up to 400 mm tall. Achenes, involucre and leaves as in var. *integrifolius* but leaves much narrower, up to 5 mm broad. *Flowers yellow, pink or reddish; December.* Open grassland. *Smuts & Gillett 2331.*

W S C N E

maritimus L.*

(= *S. otaviensis* Dinter)

Perennial herb, up to 0,6 m high. Achenes somewhat compressed, obscurely wrinkled, attenuate at both ends, margins thick. *Flowers yellow; October and February.* Streamsides. Native to the Mediterranean region. *Ubbink 1271.*

W S C N E

nanus Sond. ex Harv.

Mostly an acaulescent perennial herb. Leaves crowded in a basal rosette; peduncles nude or occasionally minutely bracteate, 1-headed. Involucre white-woolly or glabrous at base; bracts glabrous or with a few fleshy setae. Achenes slightly compressed, smooth, margins thickened. *Flowers yellow; September to January.* Short open grassland. *Drews 4.*

W S C N E

oleraceus L.*

Annual herb, up to 1,5 m high. Involucral bracts glabrous or glandular-hairy. Achenes slightly compressed, transversely wrinkled, minutely retrorsely hispid, narrowly obovate, attenuate towards base, margins thickened. *Flowers pale yellow; September to June.* Weed of cultivation, roadsides and waste places. Native to Europe and Asia. *Codd 5993.*

W S C N E

wilmsii R.E. Fr.

Perennial herb, up to 1 m high. Leaves cauline, rosetted only in juvenile stage. Involucre white-woolly at base.

Achenes slightly compressed, smooth, margins thickened. *Flowers yellow inside, pink or reddish outside; October to April.* Along roadsides and in secondary grassland. *Anderson A49.*

W S C N E

Sphaeranthus L. (s. Afr.: 7 spp.) 8955000

Robyns. 1924. Kew Bull. 1924: 177–199.

Ross-Craig. 1954. Hooker's Icon. Pl., Ser. 5, 6, 1: 1–90.

Hilliard. 1977. Compositae in Natal: 120–121.

incisus Robyns

Perennial herb, up to 0,6 m high. Stems hairy or glandular, winged, wings incised. Leaves narrowly lanceolate to linear, margins dentate. Heads globose-ovoid, pedunculate; peduncles hairy. *Flowers mauve; April to November.* Banks of rivers or dams. *Codd 5473.*

W S C N E

peduncularis DC.

Perennial herb, up to 0,6 m high. Stems winged, wings entire or slightly denticulate. Leaves linear, margins denticulate to serrulate. Heads globose-ovoid; peduncles hairy or scabrid, ± 40 mm long. *Flowers purplish; May and August to September.* In seasonally and permanently marshy places. *Keet 1767.*

W S C N E

Spilanthes Jacq. (s. Afr.: 2 spp.) 9207000

Hilliard. 1977. Compositae in Natal: 313–315.

mauritiana (Pers.) DC.

(= *S. africana* DC.)

Creeping and ascending annual herb, up to 300 mm tall. Leaves narrowly to broadly ovate. Heads axillary and terminal, solitary on peduncles up to 50 mm long. Rays very short, inconspicuous. Achenes with hyaline glabrous margins. *Flowers with yellow or whitish rays, disc yellow; October to July.* In wet places. *Hanekom 1975.*

W S C N E

Stoebe L. (s. Afr.: 30 spp.) 9037000

Levyns. 1937. Jl S. Afr. Bot. 3: 1–35.

vulgaris Levyns

Grey-green shrub, 1,0–1,5 m high. Vegetative parts differentiated into long and short shoots. Leaves of short shoots slender. Involucral bracts acuminate. Corolla with small, erect lobes. *Flowers brownish, innermost involucral bracts brown; July to June.* Grassland, can become a weed in disturbed and overgrazed areas. *Hanekom 1791.*

W S C N E

Stomatanthes *R.M. King & H. Rob.*

(s. Afr.: 1 sp.)

8816010

Oliver & Hiern. 1877. F.T.A. 3: 300–301.

King & Robinson. 1970. *Phytologia* 19,7: 429.**africanus** (*Oliv. & Hiern*) *R.M. King & H. Rob.*(= *Eupatorium africanum* Oliv. & Hiern)

Herb, up to 1 m high. Leaves ovate or ovate-lanceolate, dentate- or incise-serrate, triplinerved, alternate to subopposite. Achenes sparsely pubescent. *Flowers purplish or white; June to February*. Grassland on hillsides. *Germishuizen 3493*.

W S C N E

Tagetes *L.* (s. Afr.: 2 spp.)

9311000

Bailey. 1977. *Hortus Third*: 1095.Hilliard. 1977. *Compositae in Natal*: 328–329.**erecta** *L.**

Annual herb, up to 1 m high. Leaves pinnate, leaflets lanceolate, margins serrate. Heads solitary, on long peduncle which enlarges upwards. Pappus of scales united basally. *Flowers light yellow to orange; February to May*. Escaped from cultivation, weed in disturbed places. Native to America. *Burt Davy 26*.

W S C N E

minuta *L.**

Annual herb, up to 3 m high; all parts with embedded oil sacs. Leaves pinnately dissected, leaflets lanceolate, margins sharply serrate. Heads many in congested terminal corymbose panicles. Pappus of several scales, 1 much elongated. *Flowers creamy white; July to June*. Weed in disturbed and waste places. Native to South America. *Van Hoepen 1658*.

W S C N E

Taraxacum *Weber ex Wiggers*

(s. Afr.: 15 spp.)

9592000

Tutin *et al.* 1976. *Fl. Europ.* 4: 340–341.Hilliard. 1977. *Compositae in Natal*: 608–619.Martin & Hutchins. 1981. *A flora of New Mexico* 2: 1966–1967.**bessarabicum** (*Hornem.*) *Hand.-Mazz.**(= *T. magellanicum* auct. non Sch. Bip., Burt Davy)

Acaulescent perennial herb. Leaves up to 100 mm long, narrowly oblong in outline, lobes 4 or 5, triangular, tips blunt, patent or slightly recurved, all margins entire, petiole short, not winged. Outer involucre bracts ± 3.5 mm long, erect. *Flowers yellow; October*. Weed. Native to the Mediterranean region. *Ubbink 1182*.

W S C N E

breviscapum *A.J. Richards**

Acaulescent perennial herb. Leaves with 4 or 5 lobes, apical lobe triangular, others broadly to narrowly triangular, acute, patent or slightly recurved, both margins often filiform-dentate, sinuses filiform-dentate to

acutely lobulate, petioles not winged. Outer involucre bracts (7–)10 $\times$ 2 mm, reflexed. Cone of achene 1.0–1.5 mm long. *Flowers yellow, greyish on back; September to October and in January*. Weed in lawns and other grassy sites. Native to Europe and Asia. *Balsinhas 3438*.

W S C N E

hamatiforme *Dahlst.**

Acaulescent perennial herb. Leaf lobes 3–5, apical lobe triangular, all lobes acute, somewhat recurved, upper margins convex or sometimes straight in lower lobes, lower lobes sometimes sharply and narrowly toothed, petiole narrowly winged above or not. Outer involucre bracts 9–10 $\times$ 2.5–3.0 mm, reflexed. Cone of achene 0.5 mm long. *Flowers with ligules yellow, greyish on the back; January*. Weed. Native to northern and western Europe. *Galpin 10226*.

W S C N E

officinale *Weber sens. lat.**

Acaulescent perennial herb. Leaves oblanceolate in outline, usually deeply pinnatifid, lobes triangular-lanceolate, often retrorse and toothed; petioles not winged or only slightly so. Outer involucre bracts up to 17 mm long, reflexed. Cone of achene 0.2–0.7 mm long. *Flowers yellow; November to May*. Weed. Native to Europe and Asia. *Badenhuizen 25559*.

W S C N E

Tarchonanthus *L.* (s. Afr.: 2 spp.) 8937000Paiva. 1972. *Bolm Soc. broteriana* 46, Ser. 2: 355–368.Hilliard. 1977. *Compositae in Natal*: 110–112.Pope. 1992. *F.Z.* 6,1: 9–11.**camphoratus** *L.*(= *T. minor* Less.)

Shrub or small tree, up to 8 m high. Twigs leafy throughout. Leaves: upper surface smooth or pitted, glandular, margins subentire, lamina up to 70 mm long, petiole 1–3(–5) mm long. Female heads ± 3 -flowered. *Flowers cream-white; July to June*. Grassland, woodland or bushveld, often on hillsides or rocky outcrops. *Germishuizen 369* (male and female).

W S C N E

trilobus *DC. var. galpinii* (*Hutch. & E. Phillips*) *Paiva*(= *T. galpinii* Hutch. & E. Phillips)

Small tree, up to 8 m high. Leaves crowded at ends of twigs, upper surface bullate, eglandular, rounded to obtuse at apex; petiole (15–)20–25 mm long. Female heads 1-flowered. *Flowers yellowish; February to September*. On granite or other igneous rocks. *Renny 172* (male), *Codd 8690* (female).

W S C N E

Tenrhynea *Hilliard & B.L. Burt*

(s. Afr.: 1 sp.)

8994000

Hilliard. 1983. *F.S.A.* 33,7,2: 57.

phylicifolia (DC.) Hilliard & B.L. Burt

(= *Rhynea phylicifolia* DC.,
= *Cassinia phylicifolia* (DC.) Wood)

Shrub, up to 1 m high. Leaves lanceolate, decurrent on stem in long narrow wings, discolorous. Heads in terminal clusters forming a corymbose panicle. *Flowers white or pink; July to June.* Grassland, often in coarse herbage near forest margins. *Codd 4196.*

W S C N E

Tithonia Desf. ex Juss. (s. Afr.: 2 spp.) 9196000

Hilliard. 1977. Compositae in Natal: 307–309.

diversifolia (Hemsl.) A. Gray*

(= *Mirasolia diversifolia* Hemsl.)

Annual herb, up to 3.5 m high. Involucral bracts in ± 4 series, inner with rounded, papery tips. *Rays bright yellow on both sides; May to June.* Weed along roadsides and railway lines. Native to Central America. *Stalmans 1661.*

W S C N E

rotundifolia (Mill.) Blake*

(= *Tagetes rotundifolia* Mill.)

Annual herb, up to 2 m high. Involucre biseriate, bracts herbaceous, acute. *Flowers with rays bright orange-red above, golden yellow below, disc orange-red; January to April.* Weed in disturbed places. Native to Central America. *Stalmans 431.*

W S C N E

Tolpis Adans. (s. Afr.: 1 sp.) 9561000

Hilliard. 1977. Compositae in Natal: 598–599.

capensis (L.) Sch. Bip.

(= *Hieracium capense* L.)

Perennial herb, up to 0.6 m high. Leaves in a basal rosette, elliptic to oblanceolate, remotely and minutely toothed or more deeply cut, glabrous or sparsely hairy. Heads few to many on long peduncles arranged in corymbose panicle. Achenes finely ribbed. *Flowers yellow; July and October to April.* Open grassland or disturbed areas. *Codd 6208.*

W S C N E

Tragopogon L. (s. Afr.: 3 spp.) 9579000

Hilliard. 1977. Compositae in Natal: 606–607.

dubius Scop.*

(= *T. majus* Jacq.)

Biennial herb, up to 1 m high. Involucral bracts usually 13, sometimes more, occasionally 8. Achenes all with plumose pappus bristles. *Flowers yellow; October to December.* Weed along roadsides and sometimes in old fields. Native to southern Europe. *Stirton 1408.*

W S C N E

porrifolius L.*

Biennial herb, up to 1 m high. Involucral bracts usually 8, rarely up to 12. Achenes all with plumose pappus bristles. *Flowers violet; December.* Escaped from cultivation. Native to Europe and Asia. *Van Wyk 173.*

W S C N E

Tridax L. (s. Afr.: 1 sp.)

9245000

Hilliard. 1977. Compositae in Natal: 321.

procumbens L.*

Trailing, hairy annual or perennial herb. Leaves rhomboid-ovate, margins coarsely and irregularly toothed, petiolate. Heads solitary on long, nude peduncles. *Flowers with whitish or creamy yellow rays, disc yellow or greenish; January, May to June and in September.* Weed along roadsides and waste places. Native to Central America. *Van Hoepen 1807.*

W S C N E

Tripteris Less. (s. Afr.: 19 spp.)

9428000

Norlindh. 1943. Studies in the Calenduleae: 263–346.

Nordenstam. 1994. Compos. Newsl. 25: 46–49.

aghillana DC. var. **aghillana**

(= *Osteospermum scariosum* DC. var. *scariosum*,
(= *Tripteris flexuosa* Harv.)

Perennial herb, 100–200(–400) mm tall. Basal leaves in a rosette, (ob-)lanceolate to oblong or obovate, margins dentate; cauline leaves alternate, linear-oblongate, margins remotely dentate; hispid to glabrescent. Involucral bracts with broad white scarious margins. Achenes 9–12 mm long, with 3 wings. *Flowers yellow; August to May.* Grassland. *Hanekom 1488.*

W S C N E

auriculata S. Moore

(= *Osteospermum auriculatum* (S. Moore) Norl.)

Shrub, 1–2(–3) m high. Leaves opposite, sinuate-dentate to denticulate, up to 90 × 50 mm; petioles of at least lower leaves auriculate. Achenes winged and 1–3 wingless achenes in each head. *Flowers pale yellow; July to June.* Mountain regions. *Venter 10764.*

W S C N E

Ursinia Gaertn. (s. Afr.: 39 spp.) 9431000

Prassler. 1967. Mitt. bot. StSamml., Münch. 6: 363–463.

Hilliard. 1977. Compositae in Natal: 530–534.

alpina N.E. Br.

Matforming perennial herb. Leaves crowded in rosettes, pinnatifid or bipinnatifid. Scape bracteate. Pappus 1-seriate. *Rays yellow above, often reddish below, disc yellow; February and March.* Earth and rock cliffs and steep slopes against rock outcrops and earth terraces. *Galpin 13770.*

W S C N E

montana DC. subsp. **montana**

Prostrate or erect, matforming perennial herb. Leaves pinnatipartite, lobes linear, abruptly contracted, mucronate. Scape nude. Pappus biseriate. *Flowers yellow; September to January.* Around edges and in crevices of sandstone platforms on high mountains. *Codd & Dyer 9050.*

W	S	C	N	E
---	---	---	---	---

nana DC. subsp. **nana**

(= *U. annua* Less. ex Harv.)

Annual herb, 30–400 mm tall. Leaves pinnatipartite to bipinnatipartite, lobes 2–6 mm long. Scape nude. Pappus biseriate. *Flowers with yellow rays, often reddish below, disc yellow, rarely white; December.* *Leendertz 9385.*

W	S	C	N	E
---	---	---	---	---

nana DC. subsp. **leptophylla** Prassler

Perennial herb, 150–400 mm tall. Leaves 25–50 mm long, pinnatipartite, lobes 10–20 mm long. Scape nude. Pappus biseriate. *Flowers with yellow rays, often reddish below, disc yellow, rarely white; July to June.* Mountain grassland. *Meeuse 10052.*

W	S	C	N	E
---	---	---	---	---

saxatilis N.E. Br.

Perennial herb, up to 300 mm tall. Leaves entire or 2–5-pinnatifid, mucronate. Scape nude or with very few small leaves. Pappus 1-seriate. *Flowers with lower surface of rays coppery, rarely pale yellow, upper pale yellow, disc yellow; January to June and in September.* Mountain grassland in rock crevices and cracks. *Venter 1478.*

W	S	C	N	E
---	---	---	---	---

tenuiloba DC.

(= *U. montana* DC. subsp. *tenuiloba* (DC.) Prassler)

Perennial herb, 150–250 mm tall. Leaves 50 mm long, pinnatifid or bipinnatifid, lobes up to 10 mm long, linear, attenuate, mucronate. Scape nude. Pappus biseriate. *Flowers with rays yellow above, often reddish below, disc yellow; October and February.* Grassland. *Devenish 96.*

W	S	C	N	E
---	---	---	---	---

Verbesina L. (s. Afr.: 1 sp.)

9218000

Steyermark. 1963. Fl. Mo: 1580.
Wild. 1967. Kirkia 6: 61–62.

encelioides (Cav.) Benth. & Hook. var. **encelioides***

(= *Ximenesia encelioides* Cav.)

Annual herb, up to 1 m high. Leaves mostly alternate, sometimes opposite; ovate-deltate, pubescent, discoloured, 3-nerved from base, margin coarsely serrate, petiolate, petiole narrowly winged and auriculate at base, wings entire or denticulate. Heads solitary. *Flowers with bright yellow rays; July to June.* Weed often on riverbanks. Native to North America. *Codd 8482.*

W	S	C	N	E
---	---	---	---	---

Vernonia Schreb. (s. Afr.: 43 spp.) 8751000

Harvey. 1865. F.C. 3: 48–53.
Bremekamp. 1933. Ann. Transv. Mus. 15: 262.
Hilliard. 1977. Compositae in Natal: 25–46.
Wild. 1978. Kirkia 11.1: 31–127.
Pope. 1986. Kew Bull. 41.1: 37–43.
Jeffrey. 1988. Kew Bull. 43.2: 195–277.
Pope. 1988. Kew Bull. 43.2: 279–289.
Pope. 1992. F.Z. 6.1: 57–151.

adoensis Sch. Bip. ex Walp. var. **kotschyana** (Sch. Bip.

ex Walp.) G.V. Pope

(= *V. leptolepis* Baker)

Subshrub, up to 1.5 m high. Involucral bracts with large ovate-rotundate, apiculate and recurved appendage. *Flowers white or pinkish; November and February to July.* Open grassland and scrub, often near water. *Herman 747.*

W	S	C	N	E
---	---	---	---	---

amygdalina Delile

(= *V. randii* S. Moore)

Small tree or shrub, up to 3 m high. Leaves somewhat elliptic, tapering ± equally to apex and base, margins flat. Involucre wider than long. Pappus long-exserted from involucre, outer pappus of caducous scale-like setae, inner bristles scabrid, subequal. Heads with 10 or more flowers. Achenes setulose, glandular. *Flowers white or pale mauve; August to October.* Scrub. *Onderstall 50LN28.*

W	S	C	N	E
---	---	---	---	---

aurantiaca (O. Hoffm.) N.E. Br.

(= *Gongrothamnus aurantiacus* O. Hoffm.,
= *V. vitellina* N.E. Br.)

Scandent shrub. Leaves glabrous or sparsely pubescent, triplinerved, margins entire. Outer pappus of very short, narrow scales, inner of long, scabrid bristles. Heads usually with 3–7 flowers. Achenes hairy. *Flowers pale yellow or creamy white; December and April to July.* Scrambling on forest margins. *Zambatis 1177.*

W	S	C	N	E
---	---	---	---	---

bainesii Oliv. & Hiern subsp. **bainesii**

Perennial herb, 0.6–1.2 m high. Leaves filiform or linear, 6–30 mm long, up to 2 mm wide, markedly revolute. Heads solitary. Achenes 5- or 6-angled, subcylindric. Inner pappus of barbellate setae, outer of short narrow scales. *Flowers purple.* Submontane grassland. No material in PRE.

capensis (Houtt.) Druce

(= *V. pinifolia* (Lam.) Less.)

Herb, up to 1 m high. Leaves linear, 1–2(–4) mm broad, glabrous or thinly hairy above, silky silvery below. Many heads in corymbose panicles. Involucral bracts oblong-elliptic, abruptly mucronate. *Flowers violet; November to January.* Open grassland. *Kerfoot 8218.*

W	S	C	N	E
---	---	---	---	---

centaureoides Klatt

Annual or perennial herb, up to 1 m high. Stems and leaves gland-dotted, scabrous. Leaves linear, puber-

lous. Heads in open corymbose panicles. Involucral bracts suddenly contracted at tips. Pappus bristles of inner whorl plumose, outer whorl scales. *Flowers purple; March to July*. Grassland and open woodland on sand. *Brusse 5066*.

W S C N E

cinerascens Sch. Bip.

Shrub, up to 1,3 m high. Leaves narrowly obovate, 30 × 10 mm, subsessile, margin crenate at apex, pubescent to glabrescent, gland-dotted. Inflorescence a cymose-paniculate corymb. Inner pappus bristles barbellate. Achenes strigose-pubescent. *Flowers purple; November to March*. Tree or bush savanna. *Koekemoer 232*.

W S C N E

cinerea (L.) Less. var. **cinerea**

(= *Conyza cinerea* L.)

Annual herb, up to 1,35 m high. Stems with short-stalked long-armed T-shaped hairs. Heads numerous, small; involucre 4–6 mm long. Involucral bracts progressively longer to inside; anther tube straw-coloured. Outer pappus whorl of narrow, distinct, lanceolate scales 0,2–0,6 mm long; inner pappus whorl of white barbellate setae 2,5–5,0 mm long. Achenes terete, subfusiform, tapering to narrowed base. *Flowers pinkish or pale mauve, July*. Weed of cultivation and disturbed ground, also in woodland and grassland. *Rogers 17725*.

W S C N E

colorata (Willd.) Drake subsp. **colorata**

(= *V. senegalensis* (Pers.) Less.)

Shrub, up to 3 m high. Leaves mostly ovate-lanceolate and widest below middle or sometimes broadly oblong-elliptic, margins usually undulate. Involucre wider than long, involucral bracts ovate, acute. Heads many in rounded corymbose panicles. Pappus bristles scabrid, subequal, outer pappus of caducous scale-like setae. Achenes glabrous, gland-dotted. *Flowers white or pale mauve; December and March to July*. Scrub. *Codd 4253*.

W S C N E

crataegifolia Hutch.

(= *V. pseudo-corymbosa* Thell.)

Subshrub, up to 1,6 m high. Leaves subsessile, coarsely toothed, especially in upper half, cobwebby below. Heads with 3–7 flowers in large corymbose panicles. Achenes hairy. *Flowers whitish or mauve; March to June*. Dry, open woodland. *Codd 7902*.

W S C N E

dregeana Sch. Bip.

Herb, up to 0,6 m high. Leaves mostly in a basal rosette, elliptic to obovate; stem leaves distant, linear. Heads in an open corymb. Involucral bracts silky silvery. Achenes pilose. *Flowers violet; October to January*. Open grassland, particularly in damp places. *Hilliard & Burt 6043*.

W S C N E

erinacea Wild

Annual herb, 0,1–2,0 m high. Leaves mostly narrower than 5 mm, linear to filiform, sometimes revolute. Involucral bracts progressively longer to inside, midrib continued as 1 mm or more long, bristle-like mucro, purple and squarrose or somewhat spiralled, seldom straight. Outer pappus whorl of scales; pappus setae of inner whorl barbellate, seta barbs ascending-appressed, shorter than achene hairs. Achenes 5–7-ribbed, not rugulose between ribs. *Flowers purple; October*. Savanna and grassland; also disturbed places. *Story 6047*.

W S C N E

fastigiata Oliv. & Hiern

(= *V. schinzii* O. Hoffm.)

Annual herb, up to 1 m high. Leaves linear or linear-lanceolate, margins entire. Heads in open corymbs. Involucral bracts long-acuminate, bristle-tipped, persistently woolly araneose. Outer pappus of short linear seta-like scales, inner pappus of short barbellate setae. Achenes densely silvery strigose. *Flowers purple; July to June*. Dry, sandy habitats. *Codd 8729*.

W S C N E

galpinii Klatt

(= *V. monocephala* Harv.)

Perennial herb, up to 0,6 m high. Flowering stems leafy. Heads solitary or occasionally up to 3 or 4 at stem apex. Involucral bracts lanceolate-acuminate, subequal and uniform. Inner pappus setae barbellate. Achenes narrowly cylindric, glabrous, glandular. *Flowers purple; August to April*. Grassland. *Coetzee 342*.

W S C N E

gerberiformis Oliv. & Hiern subsp. **macrocyanus** (O.

Hoffm.) C. Jeffrey

(= *V. primulina* O. Hoffm.,

= *V. macrocyanus* O. Hoffm.)

Perennial herb, up to 0,6 m high. Leaves elliptic to spatulate, up to 300 mm, in basal rosette, glabrous or scabrous. Heads solitary. Inner pappus bristles barbellate. Achenes densely pubescent. *Flowers purple to blue; June to August and in November*. Woodland, grassland and vleis. *Renny 255*.

W S C N E

glabra (Steetz) Vatke var. **glabra**

(= *V. glabra* (Steetz) Vatke var. *ondongensis* (Klatt) Merxm.)

Perennial herb, up to 3 m high. Heads numerous, in large ± dense clusters. Involucre usually 10 mm or longer, outer involucral bracts many, ± subulate, extending onto stalk of head. *Flowers blue; February and March*. Woodland, river-fringing vegetation, roadsides. *Meeuse 9782*.

W S C N E

glabra (Steetz) Vatke var. **laxa** (Steetz) Brenan

(= *Linzia glabra* Steetz var. *laxa* Steetz)

Perennial herb, up to 1 m high. Heads laxly arranged, usually on long stalks, not densely clustered, or heads in small clusters laxly paniculately arranged.

Involucre mostly shorter than 10 mm, outer involucre bracts fewer, ovate-lanceolate, seldom extending onto stalk of head. *Flowers blue; July to June.* Flood plain alluvium, on heavy clay or sandy soil. *Codd 8384.*

W S C N E

***hirsuta* (DC.) Sch. Bip. ex Walp.**

(= *V. hirsuta* (DC.) Sch. Bip. var. *obtusifolia* Harv.)

Perennial herb, up to 1 m high. Leaves hairy, sessile, bases cordate to subcordate. Heads in terminal corymbose panicles. Inner pappus setae barbellate. Achenes terete, obscurely $\pm$ 4-ribbed, densely long-sericeous. *Flowers violet, occasionally pinkish or white; May to February.* On mountains, in grassland and in scrub on forest margins. *Germishuizen 3497.*

W S C N E

***meiostephana* C. Jeffrey**

Annual herb, up to 1,5 m high. Inner pappus of numerous bristles; outer pappus of short, distinct, or $\pm$ confluent, oblong, rounded or subtruncate scales 0,1–0,2 mm long. *Flowers mauve; April to July.* Streambanks, forest margins and grassland. *Codd 6085.*

W S C N E

***mespilifolia* Less.**

Scrambling shrub. Leaves coarsely toothed in upper half or at apex, glabrous above, thinly cobwebby or glabrescent below, penninerved. Heads with 3–7 flowers in corymbose panicles. Achenes hairy. *Flowers pinkish violet to white; December to February.* Forest margins or scrambling into trees along roads and paths through forest. *Retief 1244.*

W S C N E

***myriantha* Hook. f.**

(= *V. stipulacea* Klatt,
= *V. podocoma* Sch. Bip. ex Vatke,
= *V. ampla* O. Hoffm.)

Shrub, up to 4 m high. Leaves petiolate, margins serrate, base cordate, thinly woolly below, petiole with a pair of deciduous, orbicular basal auricles. Heads with 3–7 flowers in rounded, corymbose panicles. Achenes hairy. *Flowers pale mauve; April to November.* Forest margin. *Hemm 180.*

W S C N E

***natalensis* Sch. Bip. ex Walp.**

Perennial herb, up to 1 m high. Leaves linear-lanceolate to elliptic, silky silvery on both surfaces. Involucral bracts generally lanceolate, attenuate to a long-acuminate bristle tip or acute and bristle-tipped. *Flowers violet; September to April.* Grassland. *Onderstall 1094.*

W S C N E

***oligocephala* (DC.) Sch. Bip. ex Walp.**

(= *V. kraussii* Sch. Bip. ex Walp.)

Perennial herb, up to 1 m high. Leaves elliptic, ovate or subrotund, thinly hairy to glabrous above, silky

silvery below, markedly discolorous. Heads in corymbose panicles. *Flowers violet; July to June.* Grassland on mountainsides, rocky outcrops or on streambanks. *Hanekom 2444.*

W S C N E

***poskeana* Vatke & Hildebr. subsp. *botswanica* G.V. Pope**

Annual herb, up to 0,8 m high. Inner pappus bristles barbellate. Heads stalks longer than 20 mm. Outer involucre bracts lanceolate, inner lorate and obtuse at apex, subapically mucronate or aristate, whitish pilose or tomentose outside. Achenes 8–12-ribbed. *Flowers purple; February to August and in November.* Sandy soil in hot dry areas, in grassland and dry deciduous woodland. *Germishuizen 312.*

W S C N E

***schlechteri* O. Hoffm.**

Perennial herb, 0,5–0,75 m high. Leaves linear, margins revolute. Heads 3–many per branch, racemose or laxly paniculate. Involucral bracts puberulous, with hairs towards bract apex reddish brown. Outer pappus of short, narrow, brownish scales, inner of brownish, barbellate setae. Achenes 4- or 5-ribbed, hispidulous. *Flowers purplish; January.* Submontane grassland and rocky hillsides. *Galpin 13674.*

W S C N E

***staehelinoides* Harv.**

Subshrub, up to 1 m high. Leaves narrow-linear, thinly appressed-pubescent. Involucral bracts oblong, outer roundish or ovate, inner oblong, all close-pressed, silky at first, glabrate. Achenes minutely pubescent. *Flowers purple; January to July.* Grassland on hillsides and rocky outcrops. *Codd 2874.*

W S C N E

***steetziana* Oliv. & Hiern**

(= *V. poskeana* Vatke & Hildebr. var. *chlorolepis* (Steetz) O. Hoffm.)

Annual herb, up to 1 m high. Leaves linear or linear-lanceolate, gland-dotted and thinly hairy. Pappus bristles barbellate. Involucre campanulate, involucre bracts subobtusely, abruptly narrowed to mucronate tips, margins broadly hyaline or purple-tinged. Achenes 5–7-ribbed. *Flowers purple; October to July.* Dry, sandy places in the open or in light woodland. *Buitendag 502.*

W S C N E

***sutherlandii* Harv.**

Perennial herb, up to 0,6 m high. Leaves elliptic-oblong, 60 $\times$ 20 mm, margin coarsely serrate or subentire, both surfaces hispid, upper leaves few, distant, reduced. Inner pappus setae barbellate. Achenes subterete, densely white strigose, obscurely ribbed. *Flowers violet; July to June.* Grassland and thorn scrub, often in warm, dry river valleys. *Codd 2300.*

W S C N E

thodei E. Phillips(= *V. collina* Schltr.)

Rosulate perennial herb, up to 1,7 m high. Leaves in basal rosette, spatulate. Heads solitary or paired on nude or subnude scapes. Involucral bracts lanceolate-acuminate. Achenes hairy. *Flowers purple; November to December.* On mountains in damp grassland. *Codd & De Winter 3291.*

W S C N E

tigna Klatt(= *V. corymbosa* (L.f.) Less.,
= *V. neocorymbosa* Hilliard)

Shrub, up to 1,8 m high. Leaves coarsely toothed in upper half or at apex, sometimes entire, silky canescent below, discolorous. Heads with 3–7 flowers in corymbose panicles. Outer pappus of caducous setae, inner pappus of persistent barbellate setae. Achenes hairy. *Flowers pale to deep violet; January to April.* Mountains in scrub on forest margins, sometimes open grassland. *Strey 4074.*

W S C N E

triflora Bremek.

Shrub, up to 2 m high. Leaves ovate, dentate, glandular and pubescent, shortly petiolate. Inflorescence corymbose, heads with 3 flowers. Inner pappus bristles barbellate. Achenes glandular and pilose. *Flowers mauve; November to April.* Mountain grassland. *Hilliard & Burtt 5994.*

W S C N E

wollastonii S. Moore(= *V. transvaalensis* Hutch.,
= *V. umbratica* Oberm.)

Scrambling shrub, up to 3 m high. Heads with 10 or more flowers in erect panicles. Outer pappus of short, narrow scales, inner of long barbellate bristles. Achenes thinly hispid. *Flowers whitish, pinkish or pale violet; July to June.* On mountains, on forest margins

or along streams and paths in forest. *Muller & Scheepers 42.*

W S C N E

Xanthium L. (s. Afr.: 2 spp.)

9148000

Hilliard. 1977. Compositae in Natal: 297–299.

spinosum L.*

Annual herb, up to 1 m high, with trifid spines subtending petiole. Leaves narrowly rhomboidal, very discolorous. *Flowers greenish; October to April.* Weed in dry habitats. Native to tropical America. *Van Hoepen PRE 43320.*

W S C N E

strumarium L.*(= *X. natalense* Widder,
= *X. pungens* Wallr.)

Annual herb, up to 1,5 m high, not spiny. Leaves deltoid, cordate at base, concolorous. *Flowers greenish or yellowish; February to July.* A weed of disturbed places, particularly along streambanks and riverbanks. Native to tropical America. *Nicholas & Bishop 2176.*

W S C N E

Zinnia L. (s. Afr.: 1 sp.)

9155000

Hilliard. 1977. Compositae in Natal: 299–300.

peruviana (L.) L.*(= *Z. multiflora* L.)

Annual herb, up to 500 mm tall. Leaves opposite, sessile or subsessile, oblong-lanceolate, rough-hairy. Heads terminating main and short corymbosely arranged lateral branches. Involucral bracts dark-margined. *Flowers with reddish or brownish red rays, disc yellowish to red or brownish red; October to June.* Weed, often along roadsides. Native to southern United States. *Stalmans 211.*

W S C N E

BALANITACEAE

Shrubs or trees, spiny. Leaves alternate, 2-foliolate; leaflets obovate, elliptic or ovate-elliptic. Calyx somewhat leathery. Sepals villous on outer surface, tomentose within. Petals 5, somewhat fleshy, imbricate. Disc thick, 10-furrowed or 5-lobed. Stamens 10, inserted at base of disc. Ovary globose, 5-locular, villous. Fruit a fleshy drupe.

Balanites Delile (s. Afr.: 4 spp.)

3980000

Launert. 1963. F.Z. 2: 221–224.

maughamii Sprague(= *B. dawei* Sprague)

Tree, up to 20 m high. Spines usually forked, rarely simple. Leaves 2-foliolate, pubescent. Petals densely hairy on adaxial surface. *Flowers green or yellow; October to November.* Forest, open woodland, near springs, in pans. *Van der Schijff 5183.*

W S C N E

pedicellaris Mildbr. & Schltr.(= *B. australis* Bremek.)

Shrub or small tree, up to 6 m high. Spines always simple. Leaves shortly petiolate; leaflets sessile, obovate, 10 × 5–23 mm. Petals glabrous on both surfaces. *Flowers green; November to May.* Woodland, scrub. *Van Graan & Hardy 489.*

W S C N E

BALANOPHORACEAE

Herbs, parasitic on roots of trees or shrubs, usually brightly coloured. Leaves scale-like. Inflorescence much-branched. Flowers unisexual. Male flowers: perianth 3–8-lobed; stamens 3, inserted at base of perianth lobes. Female flowers: aggregated into small, globular heads, ovaries fused. Fruit a syncarp, individual fruits of each head developing into a 1-seeded, globose, pseudoberry.

Sarcophyte *Sparrm.* (s. Afr.: 1 sp.) 2158000

Wright. 1925. F.C. 5,2: 213.

Hansen. 1986. Bot. Jb. 106,3: 359–377.

sanguinea *Sparrm.* subsp. **sanguinea**

Purplish red, dioecious herb, up to 300 mm tall, with an offensive smell. Parasitizing on roots of *Acacia*, *Ekebergia*. *Flowers blood-red; October to November*. Woodland. *Scheepers* 777.

W	S	C	N	E
---	---	---	---	---

BALSAMINACEAE

Soft herbs, rarely woody at base. Stems translucent and watery. Flowers zygomorphic. Sepals 3–5, usually coloured, with the lowermost produced into a spur or bag. Petals 3–5, usually $\pm$ connate, anterior one the largest. Stamens 5, filaments free. Ovary superior, 5-locular. Fruit a capsule, opening elastically into 5 twisted valves.

Impatiens *L.* (s. Afr.: 5 spp.) 4856000

Grey-Wilson. 1980. *Impatiens* of Africa.

hochstetteri *Warb.* subsp. **hochstetteri**

(= *I. capensis* Thunb.,

= *I. duthieae* L. Bolus)

Erect to procumbent, annual or perennial herb, up to 0,75 m high. Leaf lamina ovate to broadly elliptic, sparsely hairy on upper surface. Lower lateral petal unevenly bilobed, lateral united petals up to 15 mm long. Spur up to 24 mm long. *Flowers pinkish mauve; November to May*. Forests, moist, usually shaded places, edge of streams. *Hanekom* 1990.

W	S	C	N	E
---	---	---	---	---

sylvicola *Burt Davy & Greenway*

Low, scrambling or erect, annual or perennial herb, up to 300 mm tall. Leaves sparsely pubescent above and

below, more densely so on younger leaves. Lateral united petals 8–14 mm long with distinct magenta spot towards base. *Flowers pink; November to May*. Forest, tall closed woodland, damp, shady places. *Van Wyk* 5992.

W	S	C	N	E
---	---	---	---	---

walleriana *Hook. f.**

Succulent, perennial herb, up to 0,8 m high. Leaf lamina glabrous; petiole with a few stipitate glands scattered along its length; lateral veins 5–8 pairs. *Flowers pinkish mauve; November to March*. Forest, riverine thickets, damp, shaded places. Native to eastern Africa. *Stalmans* 753.

W	S	C	N	E
---	---	---	---	---

BASELLACEAE

Twining, perennial herbs. Leaves alternate, broad, entire, somewhat fleshy. Flowers in axillary spikes. Perianth urn-shaped with 5 short lobes or shortly united at base with 5 spreading lobes. Stamens 5, inserted at base of corolla lobes. Ovary superior, 1-locular. Style 3-lobed or -partite. Fruit indehiscent, surrounded by persistent perianth.

Basella *L.* (s. Afr.: 1 sp.) 2424000

Verdcourt. 1964. Kew Bull. 17: 496–498.

Verdcourt. 1968. F.T.E.A. Basellaceae: 1–4.

Stannard. 1988. FZ 9,1: 163.

paniculata *Volkens*

Twiner. Leaves succulent, shortly petioled, ovate, 30 $\times$ 20 mm, acute. Spikes axillary, peduncled. Sepals ovate. Petals broadly oval, connate at base. *Flowers white*. Rocky slopes. *Brynard & Pienaar* 4372.

W	S	C	N	E
---	---	---	---	---

BEGONIACEAE

Monoecious herbs. Stems often softly succulent, swollen at nodes. Leaves alternate, asymmetrical, with large, membranous, persistent or deciduous stipules. Flowers regular or zygomorphic. Perianth segments 2 or more, petaloid. Stamens numerous. Ovary inferior; styles 2–5, stigmas 2-fid or twisted, usually papillose. Fruit usually a 3-angled and unequally 3-winged, membranous capsule.

Begonia L. (s. Afr.: 6 spp.) 5397000
Hilliard. 1976. F.S.A. 22: 137–144.

sonderiana *Irmsch.*
(= *B. caffra* sensu Burt Davy)

Perennial herb, up to 1 m high. Stems and leaves glabrous. Leaf margin lobed as well as toothed. *Flowers usually pink, sometimes white or white flushed pink; December to April.* Broken cliff faces and rock falls in forest or on forest margins, or shady rock outcrops on steep grass slopes. *Codd 9419.*

W S C N E

sutherlandii *Hook. f.*
(= *B. dissecta* Irmsch.)

Perennial herb, up to 1 m high. Stems and leaves glabrous to thinly hairy. Leaves asymmetrical, margin acutely and irregularly serrate, frequently lobed as well. *Flowers pale to deep orange or brick red; November to April.* In forest, on steeply sloping forest floor or on earth banks, rock faces or mossy boulders, sometimes epiphytic. *Codd 6420.*

W S C N E

BIGNONIACEAE

Trees, shrubs, often scandent, woody. Leaves opposite, usually compound, with articulated leaflets. Flowers bisexual, ± irregular, often large and brightly coloured. Calyx 5-toothed or -lobed or spathe-like, split down posticous side. Petals 5, fused basally, lobed distally. Stamens usually 4, sometimes 5, fused to petals. Ovary superior, 2-locular; ovules numerous in each locule; stigma of 2 flattened, ovate or oblong lobes. Fruit a 2-valved capsule or fleshy and indehiscent. Seeds usually with a wing.

Key after Diniz in F.Z. 8,3: 61–64 (1988).

- 1a Corolla blue or purple, rarely white; fruit disc-like **Jacaranda**
- 1b Corolla different; if white, fruit not disc-like 2
- 2a Flowers in pendulous lax panicles, up to 1,0(–1,5) m long; fruit fleshy, sausage-shaped, up to 1 m long, indehiscent; seeds not winged; ovary 1-locular **Kigelia**
- 2b Flowers in erect and shorter panicles or racemes or fasciculate or solitary, fruit capsular, seeds winged; ovary 2-locular 3
- 3a Calyx spatheous; leaves imparipinnate **Markhamia**
- 3b Calyx lobed or toothed, not spatheous; leaves imparipinnate or 1-jugate or simple 4
- 4a Leaves simple, greyish woolly; corolla white or whitish pink with a 40–80 mm-long cylindrical tube; capsule woody with warty valves **Catophractes**
- 4b Leaves imparipinnate, 1-jugate or simple; corolla if white (*Rhigozum*), then with a less than 20 mm-long cylindrical tube; capsule neither woody nor warty 5
- 5a Leaves short, up to 50 mm long, simple, 1-jugate or imparipinnate, clustered on cushions; perfect stamens 5; corolla deep yellow, pink or white, spiny shrubs or small trees **Rhigozum**
- 5b Leaves large, 130–330 mm long, imparipinnate; perfect stamens 4, corolla yellow, orange to scarlet; shrubs or small trees not spiny **Tecomaria**

Catophractes D. Don (s. Afr.: 1 sp.) 7723000
Diniz. 1988. F.Z. 8,3: 70–72.

alexandri *D. Don*
(= *C. welwitschii* Seem.)

Small tree or shrub, up to 4 m high. Leaves oblong to ovate or obovate, woolly on both surfaces, veins prominent below; margins irregularly toothed to crenate with small subcircular submarginal glands. Capsule warty, densely greyish green tomentose. *Flowers white; July to June.* *Colophospermum mopane* and *Acacia* woodlands, usually in sandy soils. *Codd & Dyer 3916.*

W S C N E

Jacaranda Juss. (s. Afr.: 1 sp.) 7725000
Bailey. 1977. Hortus Third: 610.

mimosifolia *D. Don**
(= *J. ovalifolia* R. Br.)

Tree, up to 15 m high. Leaves opposite, with 12 or more pinnae, fern-like. Fruit a roundish, compressed capsule. *Flowers blue or violet, rarely white; September to November.* Escaped from cultivation, along roadsides and watercourses. Native of South America. *Henderson 834.*

W S C N E

Kigelia DC. (s. Afr.: 1 sp.)

7761000

Diniz. 1988. F.Z. 8,3: 83–84.

africana (Lam.) Benth.

(= *K. pinnata* (Jacq.) DC.,
= *Bignonia africana* Lam.)

Tree, up to 25 m high. Leaves opposite or in whorls of 3, imparipinnate, crowded towards ends of branches. Flowers in pendulous, lax, terminal panicles. Fruit sausage-shaped, indehiscent. *Flowers yellowish at first, becoming reddish to purplish, streaked darker inside and outside; June to November.* Forests, open woodlands, savanna. *Germishuizen 3241.*

W S C N E

Markhamia Seem. ex Baill. (s. Afr.:

2 spp.)

7744000

Diniz. 1988. F.Z. 8,3: 74–76.

zanzibarica (Bojer ex DC.) K. Schum.

(= *M. acuminata* (Klotzsch) K. Schum.,
= *Spathodea acuminata* Klotzsch)

Small tree or shrub, 2–5 m or up to 9 m high. Pseudostipules foliaceous, subcircular to reniform. Calyx 10–15 mm long; corolla tube 20–30 mm long. Capsule hairless, lenticellate, sparsely lepidote. *Flowers yellow-greenish flecked with maroon; October to May.* Dense forests, savanna, woodlands and riverine formations. *Codd & Dyer 4538* (flower), *Pienaar 996* (fruit).

W S C N E

Rhigozum Burch. (s. Afr.: 5 spp.)

7722000

Diniz. 1988. F.Z. 8,3: 67–70.

brevispinosum Kuntze

(= *R. linifolium* S. Moore,
= *R. spinosum* Burch. ex Sprague)

Small tree or shrub, 1,2–4,0 m high. Leaves usually simple (rarely some 1-jugate), clustered on shortly

lanate cushions; oblanceolate to linear-oblanceolate. *Flowers golden-yellow, sometimes with reddish streaks; August to December and in May.* Dry open woodlands or open savanna woodlands or on sandy soils. *Jacobsen 1875.*

W S C N E

obovatum Burch.

Small tree or shrub, 1,0–4,5 m high. Leaves simple or 1-jugate, obovate to oblong-obovate, fascicled on small cushions, petiole $\pm$ 2–6(–8) mm long. *Flowers bright yellow; July and October to November.* Dry rocky places or granite sand velds. *Raal 900.*

W S C N E

zambesiicum Baker

Small tree or shrub, up to 4 m high. Leaves imparipinnate with leaflets (1)2–5-jugate, rachis winged, solitary or clustered in small almost glabrous cushions, petiole $\pm$ 4–9 mm long. *Flowers golden-yellow; July to November.* Deciduous woodlands, dry sandy ground. *Codd & Dyer 4580.*

W S C N E

Tecomaria Spach (s. Afr.: 1 sp.)

7713000

Diniz. 1988. F.Z. 8,3: 64–66.

capensis (Thunb.) Spach subsp. **capensis**(= *Bignonia capensis* Thunb.)

Scandent shrub, 1,5–4,0 m high. Leaflets (2-)3- or 4-(5-)jugate. Calyx 5–8(–10) mm long, campanulate to shortly cylindric; calyx teeth shorter than 3 mm. *Flowers yellow, orange to scarlet; July to June.* Open woodlands and in thickets, cultivated as an ornamental. *Codd & Dyer 9097.*

W S C N E

BOMBACACEAE

Trees, usually attaining a very large girth. Leaves alternate, digitately compound; stipules present. Flowers large, bisexual; pedicels 2-bracteate. Calyx leathery, 5-segmented or -lobed. Petals 5, adhering to base of staminal tube. Stamens indefinite, united into a tube below. Ovary 5–10-locular; stigma 5–10-lobed. Fruit indehiscent, woody, cylindric to globose. Seeds embedded in pulp or floury mass.

Adansonia L. (s. Afr.: 1 sp.)

5023000

Wild. 1961. F.Z. 1: 512–513.

digitata L.

Tree, up to 20 m high. Flowers large, 48–150 mm long. Calyx deeply 5-lobed. Stamens numerous. Fruit inde-

hiscent, with floury acid pulp. *Flowers white; November to March.* In woodland or thicket. *Codd 4689.*

W S C N E

BORAGINACEAE

Herbs, shrubs or trees, often with rough hairs. Stems round. Leaves alternate, without stipules. Flowers often in coiled inflorescences, regular. Calyx sometimes enlarged in fruit and enclosing it. Petals 5, united. Stamens 5, arising from corolla tube. Ovary superior, entire or deeply 4-lobed, 2- or 4-locular. Fruit a drupe, berry or 1–4-seeded nutlets.

Key partly after Dyer, Gen 1: 508–509 (1975).

- 1a Ovary entire or slightly 4-lobed; style terminal; fruit usually a drupe 2
- 1b Ovary deeply 4-lobed; style gynobasic; fruit dry, of 2–4 nutlets 4
- 2a Style entire or shortly bifid; fruit becoming dry, of 2–4 nutlets **Heliotropium**
- 2b Style once or twice cleft; stigmas 2 or 4 3
- 3a Style twice cleft; stigmas 4 **Cordia**
- 3b Style once cleft; stigmas 2 **Ehretia**
- 4a Calyx much enlarged after flowering and enclosing fruit; anthers produced into a long, usually twisted appendage ... **Trichodesma**
- 4b Calyx not or only slightly enlarged after flowering; anthers without terminal appendages 5
- 5a Nutlets spiny or glochidiate 6
- 5b Nutlets crenate or winged on margins, or rugose or granular 7
- 6a Tips of nutlets scarcely or not projected above their surface of attachment **Cynoglossum**
- 6b Tips of nutlets projecting considerably above their surface of attachment **Lappula**
- 7a Corolla irregular, bilabiate (zygomorphic) **Echium**
- 7b Corolla regular (actinomorphic) 8
- 8a Nut hard, shiny **Myosotis**
- 8b Nut smooth or rugose, not shiny 9
- 9a Throat of corolla tube naked or gibbous within or with 5 folds intruded from outside 10
- 9b Throat of corolla tube closed with obtuse or arching papillose scales or tufts of hairs 11
- 10a Corolla tube naked **Amsinckia**
- 10b Corolla tube gibbous within or with intruded folds **Lithospermum**
- 11a Corolla tube with papillose scales **Anchusa**
- 11b Corolla tube with 5 longitudinal bands of hairs inside **Buglossoides**

Amsinckia *Lehm.* (s. Afr.: 2 spp.) 7082000

Chater. 1972. Fl. Europ. 3: 110.

menziesii (*Lehm.*) *A. Nelson & J.F. Macbr.**

Annual herb, up to 0,8 m high. Leaves 30–80 × 5–15 mm. Corolla shorter than 10 mm. Inflorescence ebracteate, flowers sessile. Nutlets muricate, setulose. *Flowers pale yellow; November.* Weed in cultivated lands. Native of North America. *Van Wyk 1782.*

W S C N E

Anchusa *L.* (s. Afr.: 2 spp.) 7093000

Wright. 1904. F.C. 4,2: 16–17.

Chater. 1972. Fl. Europ. 3: 106–108.

azurea *Mill.**

(= *A. italica* Retz.)

Perennial herb, 0,2–1,5 m high, with long, white bristles. Calyx divided ± to base. Corolla tube equalling or longer than limb, limb (8–)10–15 mm in diameter. Nutlets longer than wide, at least 6 mm. *Flowers violet or deep blue; February to March.* Weed. Native to Europe and Asia. *Pole-Evans sub PRE 40829.*

W S C N E

capensis *Thunb.*

(= *A. riparia* DC.)

Annual or perennial herb, 0,3–0,6 m high, shortly and softly hairy. Calyx deeply 5-lobed. Corolla tube slightly longer than limb. *Flowers blue; October to January and in April.* Streambanks or marshy areas. *Mogg 27083.*

W S C N E

Buglossoides *Moench* (s. Afr.: 1 sp.) 7109010

Fernandes. 1972. Fl. Europ. 3: 87–88.

arvensis (*L.*) *I.M. Johnst.**

(= *Lithospermum arvense* L.)

Herb, 0,05–0,50(–0,90) m high. Indumentum of calyx whitish, calyx more than half as long as corolla tube, with long, sparse hairs, lobes acute. Corolla not longer than 10 mm. Nutlets tuberculate, brownish or greyish, not shining, with hard pericarp. *Flowers white; August to November.* Weed growing in disturbed places. Native to Europe. *Smith 884.*

W S C N E

Cordia L. (s. Afr.: 6 spp.)

7038000

Martins. 1990. F.Z. 7,4: 60–72.

africana Lam.(= *C. abyssinica* R. Br. ex A. Rich.)

Small to medium-sized tree, up to 24 m high. Leaves farinose below, with or without spreading hairs. Calyx in flower with 10–12 well-marked ridges, tomentose outside. Corolla lobes shallow, much broader than long. *Flowers white; May*. Dry forest, mountain woodland and rocky mountainsides. *Van Warmelo 5159/35*.

W S C N E

caffra Sond.

Small tree or shrub, up to 7 m high. Leaves glabrous at maturity, crenate-serrate; petiole very slender. Panicles pubescent to glabrous, lax. Calyx in flower smooth. Corolla lobes longer than broad. *Flowers whitish, yellowish or greenish; September*. Woodland and forest margins. *Netshiungani 769* (flower), *Codd 8355* (fruit).

W S C N E

grandicalyx Oberm.

Small tree or shrub, up to 7 m high. Lower surface of leaves tomentose; margins entire, slightly crenate to minutely dentate. Inflorescence minutely tomentose. Fruit up to 40 × 35 mm, with horn-shaped point; fruiting calyx up to 35 mm wide at mouth, very prominently nerved. *Flowers white; September to November*. Riverbanks and on rocky soils. *Codd & Dyer 4584* (flowers), *Codd 5991* (fruit).

W S C N E

monoica Roxb.(= *C. ovalis* Hochst. ex A. DC.)

Small tree or shrub, up to 5(–7) m high. Leaves pinnately or 3-nerved from base, densely covered with short, rigid excrescences above; ovate, obovate or sub-circular, sometimes elliptic; densely pubescent to rough and often with stellate or branched hairs mainly on nerves below; margins subentire, crenate to crenate-serrate. Calyx not ridged or prominently nerved; densely scabrous or roughish and tawny-tomentose. *Flowers yellow; October to June*. Sandy or alluvial soils near rivers, sometimes on anthills. *Venter 8590* (flowers), *Zambatis 1597* (fruit).

W S C N E

sinensis Lam.(= *C. gharaf* Ehrenb. ex Asch.)

Small tree or shrub, 4–8 m high. Leaves opposite to alternate, narrowly obovate to elliptic, above rough and often densely covered with cystoliths, below with short ± appressed hairs in all directions and longer hairs in axils and along midrib. Calyx smooth, pubescent or minutely fulvous-tomentose outside. *Flowers white; January to February and in May and August*. Grasslands, open deciduous woodlands and riverbanks, usually on sandy or rocky soils or on termitaries. *Herman 140*.

W S C N E

Cynoglossum L. (s. Afr.: 8 spp.)

7064000

Martins. 1990. F.Z. 7,4: 102–108.

hispidum Thunb.(= *C. enerve* Turcz.)

Biennial herb, 0,25–0,65 m high. Leaves with secondary nerves not well-marked; cauline leaves lanceolate to oblong. Pedicels at flowering ± 1,5 mm long, elongated in fruit up to 15(–25) mm. Corolla lobes 0,6–0,8 mm long. *Flowers purplish violet or reddish; September to February and in May*. Damp spots in grassland; disturbed places. *Devenish 1202*.

W S C N E

lanceolatum Forssk.(= *C. micranthum* Desf.)

Biennial or sometimes perennial herb, 0,3–1,2(–1,8) m high. Leaves with secondary nerves merged into 2 submarginal well-marked nerves. Pedicels 1,0–2,5 (–3,0) mm long in flowering, not elongated in fruit. Corolla lobes 0,6–1,5 mm long. *Flowers white or blue or with tube mauve and limb white or bluish but deep blue at throat; July to June*. Streambanks, vleis, grassland, disturbed places. *Hemm 163*.

W S C N E

Echium L. (s. Afr.: 2 spp.)

7118000

Gibbs. 1972. Fl. Europ. 3: 97–99.

plantagineum L.*(= *E. lycopsis* L.)

Herb, 0,2–0,6 m high. Basal leaves ovate to spatulate with prominent lateral veins; cauline leaves oblong to lanceolate with cordate base. Corolla 18–30 mm long, with 2 stamens exerted from corolla tube. *Flowers blue becoming pink through purple; November to February*. Grassland. Native of Europe and Asia. *Steyn 27*.

W S C N E

vulgare L.*

Herb, 0,2–0,9 m high. Basal leaves shorter than 150 mm, elliptical to lanceolate, attenuate and petiolate at base; upper leaves narrowly lanceolate, sessile. Corolla 10–19 mm long, with 4 or 5 stamens exerted from corolla tube. *Flowers blue to bluish violet; November to January*. Disturbed places. Native to Europe and Asia. *Sidey 3977*.

W S C N E

Ehretia P. Br. (s. Afr.: 3 spp.)

7043000

Martins. 1990. F.Z. 7,4: 75–79.

amoena Klotzsch

Small tree or shrub, up to 6 m high. Leaves scabrous above, pubescent below; venation reticulate, prominent below. Corolla lobes longer than tube, reflexed. *Flowers white; August to April*. Riverine gallery for-

ests, open forests, woodlands, thickets, open ground, often on sandy alluvial soils or sometimes rocky soils. *Herman 759.*

W S C N E

obtusifolia *Hochst. ex DC.*

Small tree or shrub, up to 4,5(–6,0) m high. Leaf margins entire to crenate-dentate; lamina pubescent and usually with capitate glandular hairs; acarodomatia absent; petiole 4–15(–20) mm long. Corolla lobes as long as or shorter than tube, ± spreading. *Flowers blue to mauve, rarely white or purple; July to April.* Woodlands, thickets, granite hills, often on termite mounds. *Codd & Dyer 4649.*

W S C N E

rigida (*Thunb.*) *Druce*

(= *E. hottentotica* Burch.)

Small tree or shrub, 0,8–6,0 m high. Leaf margins always entire; lamina glabrous to shortly hispid; acarodomatia present; petiole absent or up to 4 mm long, rarely up to 8 mm long. Corolla lobes as long as or shorter than tube, ± spreading. *Flowers mauve to pale blue or white; August to March.* Savanna woodlands, savannas with shrubs and trees, shrublands and thickets, granite hills, Kalahari sands. *Hanekom 1637.*

W S C N E

Heliotropium *L. (s. Afr.: 19 spp.) 7052000*

Friedrich-Holzhammer. 1967. F.S.W.A. 119: 3–10.

Hilliard & Burtt. 1970. Notes R. bot. Gdn Edinb. 30: 113–118.

Martins. 1990. F.Z. 7,4: 83–94.

amplexicaule *Vahl**

Herb, up to 0,6 m high. Leaves hairy, lanceolate to elliptic. Corolla tube longer than calyx, glandular hairy outside, lobes rounded. Stigma sessile. Fruits ± invested by calyx, tips of carpels not divergent. *Flowers mauve; October to January.* Escaped from cultivation, on sandy soil. Native to South America. *Scheepers 823.*

W S C N E

ciliatum *L. Kaplan*

(= *H. gibbosum* Friedr.)

Erect perennial herb, up to 0,8 m high. Hairs on stem appressed. Calyx lobes thick, callose. Corolla lobes acuminate, tube long. Fruit tuberculate-crested, saddle-shaped at apex; nutlets connate in pairs. *Flowers white; October to July.* Riverbanks, savanna with trees and shrubs and dry woodland, sandy or rocky soil. *Codd 2247.*

W S C N E

curassavicum *L.*

Prostrate or decumbent annual or perennial herb, fleshy, glabrous, glaucous. Leaves narrowly oblong to narrowly obovate. Corolla lobes triangular-ovate to

oblong. *Flowers white; October to April.* Halophyte, in saline soils, at edges of salt pans. *Codd 3431.*

W S C N E

giessii *Friedr.-Holzh.*

(= *H. erectum* Friedr.-Holzh.)

Erect perennial herb, up to 0,5(–1,0) m high. Leaves lanceolate to oblong. Corolla lobes oblong or oblong-obovate, rounded; tube with retrorse hairs. Style well developed. Fruit subglobose, pustulate, glabrous; nutlets free. *Flowers white; December to June.* Bare soils of pans and in open short woodlands. *Codd 4133.*

W S C N E

hereroense *Schinz*

(= *H. pseudostrigosum* Dinter)

Hairy semishrub, 0,3–1,0 m high. Leaves linear-lanceolate to linear. Corolla lobes rounded, tube scarcely as long as calyx. *Flowers white; January.* *Van der Schijff 5209.*

W S C N E

indicum *L.**

Erect annual or short-lived perennial herb, up to 1,5 m high. Leaves large, ovate to broadly ovate or triangular-ovate, wider than 25 mm. Fruits not enclosed in calyx, mitre-shaped, fruit lobes remarkably divergent; mature nutlets with an empty cavity. *Flowers white or rarely mauve or blue; December.* Sandy or muddy riverbanks, edges of rivers, floodplains, always near water. Pantropical. *Brynard 4410.*

W S C N E

lineare (*A. DC.*) *Gürke*

(= *H. kuntzei* Gürke,

= *Heliophyllum lineare* A. DC.)

Erect perennial herb, up to 450(–600) mm tall, with 2-branched trichomes. Leaves linear. Corolla lobes acuminate, tube longer than calyx. *Flowers white, cream or yellow; October to May.* Muddy pans and sometimes wooded stony habitats. *Van Wyk 847.*

W S C N E

ovalifolium *Forssk.*

Erect or decumbent annual or perennial herb, up to 0,6(–0,9) m high. Leaves obovate or, rarely, elliptic, apiculate, densely covered with long silvery appressed hairs. Corolla lobes broadly ovate to triangular-ovate, acute or apiculate. Style very short. Cymes not bracteate. Fruit clothed with short hairs. *Flowers with white limb and yellow tube; July to April.* Grasslands, floodplains, edges of swamps, riverbanks, roadsides and waste ground, sandy or muddy soils. *Codd 4069.*

W S C N E

steudneri *Vatke*

(= *H. nelsonii* C.H. Wright,

= *H. rogersii* L. Kaplan)

Erect or procumbent perennial herb, 0,6–0,9 m high. Leaves lanceolate. Corolla lobes oblong to subquadrate, obtuse to truncate, tube with antrorse hairs. Style well developed. Fruit ± obpyriform, not pustulate,

glabrous; nutlets cohering in pairs. *Flowers white or with yellow throat; August to May*. Open grounds, grasslands and in dry bushes on dry, poor and often sandy soils. *Codd 9999*.

W S C N E

strigosum Willd.

(= *H. constrictum* L. Kaplan)

Erect annual or sometimes perennial herb, 150–350 mm tall. Leaves lanceolate to elliptic; hairy. Flowers in terminal cymes; cymes bracteate. Corolla lobes widely triangular-ovate, obtuse or rounded, erect. Fruits not beaked. *Flowers white or with orange-yellow tube; October to July*. Open woodlands and grasslands on shallow or sandy soils, roadsides, denuded grounds. *Codd 4901*.

W S C N E

supinum L.

Prostrate or decumbent annual herb. Leaves small, broadly ovate to broadly obovate, 7–19 mm broad, hirsute, conspicuously petiolate, lateral nerves impressed above. Corolla lobes oblong. Cymes not bracteate. Fruit enclosed in calyx. *Flowers with greenish tube and white limb; December and April*. Heavy black or brown soils in dried-up water holes and pools. *Straub 209*.

W S C N E

zeylanicum (Burm. f.) Lam.

(= *H. subulatum* (Hochst. ex A. DC.) Vatke)

Erect or procumbent perennial herb, up to 0,6(–0,9) m high. Leaves lanceolate, linear-lanceolate or ovate-lanceolate. Corolla lobes caudate-acuminate. Calyx lobes thin, 3-ribbed. Fruit tuberculate, subglobose; nutlets free. *Flowers yellow or greenish; September to January and in June*. Dry woodlands and savannas, open grounds, sandy riverbanks and edges of rivers and lakes. *Retief 197*.

W S C N E

Lappula Moench (s. Afr.: 4 spp.) 7073000

Chater. 1972. Fl. Europ. 3: 117–118.

Hilliard & Burt. 1979. Notes R. bot. Gdn Edinb. 37,2: 288–289.

squarrosa (L.) Dumort. subsp. heteracantha (Ledeb.)

Chater*

(= *L. echinata* Gilib.)

Annual or biennial herb, 0,1–0,7 m high, with sparse, erecto-patent or patent as well as appressed hairs. Pedicels erect or erecto-patent in fruit. Nutlets ovoid-trigonal, attached to receptacle by only part of their length, with 2 or 3 rows of glochidia, outer row very short, those of inner row 2–3 mm, confluent at base. *Flowers pale blue; September to November*. Weed of disturbed places. Native to Europe and Asia. *Kinges 1944*.

W S C N E

Lithospermum L. (s. Afr.: 9 spp.) 7109000

Wright. 1904. F.C. 4,2: 20–24.

Martins. 1990. F.Z. 7,4: 108–110.

afromontanum Weim.

(= *L. officinale* auct. non L.)

Perennial herb or shrub, 0,5–1,8 m high. Branches hirsute. Calyx somewhat shorter than corolla tube, enlarging in fruit. Nutlets smooth. *Flowers yellowish; December to February*. Along streambanks, often in shade; grasslands, montane forest. *Kluge 2247*.

W S C N E

cinereum DC.

Subshrub, 100–450 mm tall. Branches with adpressed hairs. Calyx as long as corolla tube. Nutlets rugose. *Flowers white; November to May*. Grassland. *Hanekom 2257*.

W S C N E

Myosotis L. (s. Afr.: 7 spp.) 7100000

Wright. 1904. F.C. 4,2: 18–20.

afropalustris C.H. Wright

Herb, up to 0,6 m high. Hairs on calyx not hooked. *Flowers blue; November to January and in May*. Streambanks and marshy areas. *Devenish 1199*.

W S C N E

sylvatica O. Hoffm.

Herb, up to 500 mm tall. Hairs on calyx hooked. *Flowers blue; October to May*. Streambanks, swampy areas, often in water. *Codd 8125*.

W S C N E

Trichodesma R. Br. (s. Afr.: 6 spp.) 7056000

Brummitt. 1990. F.Z. 7,4: 94–99.

angustifolium Harv.

(= *T. lanceolatum* Schinz)

Perennial herb or subshrub, 500(–600) mm tall. Pedicels and inflorescence axes with appressed setae. Sepals 2,5–4,0 mm broad. Corolla 12–18(–22) mm long. Nutlets 4, glochidiate. Leaves linear to linear-elliptic; 1–6(–9) mm broad. *Flowers blue or sometimes pinkish blue; August to May*. Sandy or stony soil in grassland; disturbed places. *Codd 6645*.

W S C N E

physaloides (Fenzl) A. DC.

(= *Friedrichsthalia physaloides* Fenzl)

Perennial herb, up to 0,6 m high. Leaves broadly ovate or broadly elliptic to lanceolate or linear-lanceolate or linear-elliptic, (2–)5–25(–35) mm broad. Pedicels and

inflorescence axes glabrous. Sepals (3,0–)3,5–6,0 (–7,0) mm broad. Corolla (13–)15–22(–25) mm long. Nutlets 1, tomentose. *Flowers with lobes white or sometimes cream or pink-tinged, tube white with brown markings at sinus between lobes; July to June.* In grassland or woodland, often abundant after fire. *Onderstall 443.*

W S C N E

zeylanicum (Burm. f.) R. Br.
(= *Borago zeylanica* Burm. f.)

Annual or short lived perennial herb, 0,20–1,75 m high. Pedicels and inflorescence axes densely clothed with flexuous spreading hairs 1–2 mm long. Corolla 7–9 mm long. Nutlets 4, smooth. *Flowers with lobes pale blue to lilac or pinkish, tube often whitish between lobes and with red to purple markings at its base; July to June.* Riverbanks, shrubland, disturbed places. *Hardy 5656.*

W S C N E

BRASSICACEAE

Herbs, usually with sharp-tasting sap. Leaves alternate, often in a basal rosette, without stipules. Flowers regular. Petals 4, free; often stalked, arranged in the form of a cross. Stamens 6: 4 long and 2 short, free. Ovary superior, stalkless. Fruit a dry, 2-locular capsule, either long and narrow or short and rounded, usually opening by means of 2 valves from below.

Key after Marais in F.S.A. 13: 2–4 (1970).

- 1a Fruit transversely articulate with 2 or more segments which separate at maturity; lower segment indehiscent or whole fruit breaking into 1-seeded portions 2
- 1b Fruit not transversely articulate; siliquae or siliculae opening by valves or breaking into 1-seeded portions, or hard and indehiscent 3
- 2a Upper segment of fruit globose or ovoid, beaked with persistent style **Rapistrum**
- 2b Upper segment cylindrical, oblong-ovoid or ± conical, sometimes constricted between seeds **Raphanus**
- 3a Fruits at least 4 times as long as broad (including length of style or break) 4
- 3b Fruits less than 4 times as long as broad 15
- 4a Hairs branched or a mixture of simple and branched hairs 5
- 4b Hairs simple or absent 6
- 5a Cotyledons accumbent; sepals erect; stigma deeply 2-lobed, lobes erect, each frequently with dorsal swelling or horn; plants glandular **Matthiola**
- 5b Cotyledons incumbent; leaves once pinnatisect or pinnately angular-dentate; perennial herbs; valves 3-nerved; stigma 2-lobed **Sisymbrium**
- 6a Cotyledons accumbent; valves of fruit frequently with very indistinct midrib, appearing almost veinless, or if distinct then stamens angled and fruits subterete-quadrangular; style short or long, never beak-like and seed-bearing 7
- 6b Cotyledons incumbent or folded longitudinally round incumbent radicle, or twice transversely folded; valves of fruit strongly 1–3- or more-nerved; style frequently beak-like, bearing up to 9 seeds 8
- 7a Seeds in 2 rows, rarely irregularly in 1 row; flowers white or yellow; fruits subterete, valves with an inconspicuous midrib **Rorippa**
- 7b Seeds in 1 row; flowers white, mauve, lilac or purple; fruits flat, valves apparently nerveless; leaves 3-foliolate or pinnate with petiolulate leaflets or leaves pinnately lobed **Cardamine**
- 8a Cotyledons incumbent or folded longitudinally round incumbent radicle; style often beak-like and seed-bearing, flat or conical and thick; leaves frequently pinnatifid; flowers white, yellow, lilac, mauve or purple 9
- 8b Cotyledons twice transversely folded; fruiting style sometimes conspicuously swollen and enlarged, but never seed-bearing; leaves simple or pinnatifid; flowers blue, white, pink, mauve or purple **Heliophila**
- 9a Seeds in 2 rows 10
- 9b Seeds in 1 row 12
- 10a Valves of fruit 3-nerved, strigose with short, thick-based, upward pointing hairs; flowers small, yellow, sepals hairy **Sisymbrium**
- 10b Valves of fruit 1-nerved, if hairy then with lanceolate or ensiform beak at least half as long as valves; flowers large, yellow or lilac with dark veins, or if small and yellow, then sepals glabrous 11
- 11a Beak large, flat, ensiform or lanceolate, never seed-bearing; valves hispid; flowers large, yellow or lilac with dark veins ... **Eruca**
- 11b Style not beak-like, 1,5–2,5 mm long, narrowly cylindrical or more or less obconical, sometimes seed-bearing; flowers small, yellow, sometimes tinged with violet when fading **Diplotaxis**
- 12a Cotyledons incumbent or longitudinally folded round incumbent radicle; style never beak-like and seed-bearing **Sisymbrium**
- 12b Cotyledons always longitudinally folded round incumbent radicle; style beak-like and seed-bearing 13
- 13a Valves of fruits 3- or more-nerved; fruits spreading, 20–40 mm long, 2,5–4,0 mm in diameter; seeds globose **Sinapis**
- 13b Valves of fruit 1-nerved 14
- 14a Fruit ± compressed or subterete; racemes ebracteate **Brassica**
- 14b Fruit ± quadrangular; racemes often bracteate, at least in lower part **Erucastrum**

- 15a (3) Fruit angustisepate, compressed laterally 16
 15b Fruit latiseptate, not compressed or dorsally compressed 19
 16a Ovules 6–24; cotyledons broad; stem leaves sagittate-amplexicaul; plant with branched hairs; fruit obcordate-triangular, emarginate, 6–9 × 4–8 mm *Capsella*
 16b Ovules 1–4; cotyledons narrow, linear 17
 17a Fruit indehiscent, reniform to reniform-obcordate; valves strongly tuberculate and ridged; leaves pinnatifid *Coronopus*
 17b Fruit breaking into two 1-seeded portions or valves falling away from seeds 18
 18a Valves falling away enclosing seed; valves tuberculate and ridged *Coronopus*
 18b Valves falling away empty and seed falling free; valves smooth *Lepidium*
 19a Valves 1- or more nerved and finely reticulately veined *Heliophila*
 19b Valves with an indistinct midrib, appearing veinless *Rorippa*

Brassica L. (s. Afr.: 5 spp.)

2949000

Marais. 1970. F.S.A. 13: 5–7.

juncea (L.) Czerniak.*(= *Sinapis juncea* L.)

Annual herb, up to 1 m high with slender, ascending branches. Lower leaves lyrate-pinnatisect, sparsely hispid; upper leaves glabrous, simple, shortly petiolate. Beak up to 10 mm long, its tip narrower than stigma. *Flowers yellow; February*. Disturbed places. Native to Asia. *Breyer sub TRV 22248*.

W	S	C	N	E
---	---	---	---	---

rapa L.*(= *B. campestris* L.)

Annual or biennial herb. Upper stem leaves cordate at base, amplexicaul. Petals 6–10 mm long. *Flowers yellow; November to February*. Disturbed places. Origin obscure. *Jenkins sub TRV 10685*.

W	S	C	N	E
---	---	---	---	---

Capsella Medik. (s. Afr.: 1 sp.)

2986000

Marais. 1970. F.S.A. 13: 97–98.

bursa-pastoris (L.) Medik.*(= *Thlaspi bursa-pastoris* L.)

Erect, annual herb, up to 450 mm tall, with branched hairs. Stem leaves sagittate-amplexicaul. Fruits 6–9 × 4–8 mm, obcordate-triangular, emarginate, lateral margins almost straight. *Flowers white; July to June*. Disturbed places. Native to Europe. *Hanekom 1828*.

W	S	C	N	E
---	---	---	---	---

Cardamine L. (s. Afr.: 5 spp.)

2966000

Marais. 1970. F.S.A. 13: 100–101.

africana L.

A soft herb, up to 300 mm tall. Stems erect or decumbent. Leaves trifoliate. *Flowers white; July to June*. Forest, kloofs. *Kluge 1076*.

W	S	C	N	E
---	---	---	---	---

hirsuta L.*

Annual herb, up to 300 mm tall. Basal leaves in a distinct rosette, pinnate; leaflets hairy on upper surface. Siliques overtopping flowers. *Flowers white; August*. Weed in pot plants and garden. Native to Europe. *Pienaar 942*.

W	S	C	N	E
---	---	---	---	---

impatiens L.*

Annual or biennial herb, up to 300 mm tall. Stems erect, leafy. Leaves pinnate; stem-leaves with narrow auricles. *Flowers white; October*. Streambanks. Native of Europe. *Devenish 897*.

W	S	C	N	E
---	---	---	---	---

Coronopus Zinn (s. Afr.: 3 spp.)

2884000

Marais. 1970. F.S.A. 13: 94–96.

didymus (L.) Sm.(= *Lepidium didymus* (L.) Sm.,= *Senebiera didyma* (L.) Pers.)

Procumbent or erect herb, up to 300 mm tall. Stems pilose. All leaves pinnatifid or pinnatifid. Halves of fruits laterally compressed. *Flowers white; September to October*. Disturbed places. *Hanekom 1867*.

W	S	C	N	E
---	---	---	---	---

integrifolius (DC.) Spreng.(= *Senebiera integrifolia* DC.,= *Senebiera linoides* DC.)

Prostrate, decumbent or erect herb, up to 300 mm tall. Stems puberulous. All or at least upper leaves entire. Fruit of ± 2 globose halves. *Flowers white; September to March*. Disturbed places. *Ubbink 708*.

W	S	C	N	E
---	---	---	---	---

Diplotaxis DC. (s. Afr.: 1 sp.)

2946000

Marais. 1970. F.S.A. 13: 12.

muralis (L.) DC.*(= *Sisymbrium murale* L.)

Annual or biennial herb, up to 500 mm tall. Style not beak-like, narrowly cylindrical or ± obconical. Flowers small, sometimes tinged with violet when fading.

Flowers yellow; November to April. Disturbed places. Native to southern and Central Europe. *Mogg 12376.*

W S C N E

Eruca Mill. (s. Afr.: 1 sp.)

2944000

Marais. 1970. F.S.A. 13: 12–14.

sativa Mill.

(= *E. vesicaria* (L.) Cav. subsp. *sativa* (Mill.) Thell.)

Stout, erect, branched, annual herb, up to 0,6 m high. Beak large, flat, ensiform or lanceolate, never seed-bearing. Valves hispid. *Flowers large with dark veins; yellow or lilac; December to January.* Disturbed places. *Burt Davy 3074.*

W S C N E

Erucastrum (DC.) Presl (s. Afr.: 3 spp.)

2947000

Marais. 1970. F.S.A. 13: 7–10.

griquense (N.E. Br.) O.E. Schulz

(= *Brassica griquensis* N.E. Br.,
= *Diplotaxis griquensis* (N.E. Br.) Sprague)

Erect herb, up to 350 mm tall. Petals 4–7 mm long. Siliquae 1,3–1,6 mm in diameter. Valves always scarious with short upward-pointing hairs. Beak 0,5–2,0 mm long. Fruiting pedicels 3–11 mm long. *Flowers yellow; January to February.* Grassland. *Mogg 806.*

W S C N E

strigosum (Thunb.) O.E. Schulz

(= *Brassica strigosa* (Thunb.) DC. var. *glabrata* Sond.,
= *Sisymbrium strigosum* Thunb. p.p.)

Erect herb, up to 1 m high. Petals 6,5–9,0 mm long. Siliquae 1,5–2,2 mm in diameter. Valves glabrous. Beak 3,0–10,5 mm long. Fruiting pedicels 10–20(–40) mm long. *Flowers yellow; October and March.* Road-sides. *Stalmans 708.*

W S C N E

Heliophila L. (s. Afr.: 71 spp.)

2875000

Marais. 1970. F.S.A. 13: 17–76.

carnosa (Thunb.) Steud.

(= *Cheiranthus carnosus* Thunb.,
= *H. sulcata* P. Conrath)

Erect, glabrous dwarf shrub without axillary glands, up to 0,6 m high. Lower leaves often in a rosette, petiolate. Petals narrowly obovate to obovate-circular, clawed. *Flowers white to purple; October to January.* Grassland, hills. *HGB sub J 26918.*

W S C N E

rigidiuscula Sond.

(= *H. virgata sensu* Eckl. & Zeyh.)

Herb, up to 400 mm tall. Petals and 2 short filaments each with large, papillate appendage, or occasionally each petal with large hollow cup-like gland on inside of claw. *Flowers mauve, blue, white; November to January.* Grassland. *Kerfoot 8160.*

W S C N E

Lepidium L. (s. Afr.: 18 spp.)

2883000

Marais. 1970. F.S.A. 13: 83–84.

Jonsell. 1975. Bot. Notiser 128: 20–40.

africanum (Burm. f.) DC. subsp. africanum

(= *L. schlechteri* Burt Davy,
= *Thlaspi africanum* Burm. f.)

Yellowish green biennial herb, up to 0,75 m high, branched in upper, flowering part. Basal leaves oblanceolate, coarsely serrate-dentate and with a few bigger teeth near apex. *Flowers white; October to February.* Weed in disturbed places. *Strey 2978.*

W S C N E

bonariense L.*

Erect herb, up to 0,6 m high. Basal leaves bipinnatifid, densely hairy; upper leaves pinnatifid, puberulous or glabrescent. Siliculae emarginate, with small apical wings. *Flowers white; June to November.* Disturbed places. Native to South America. *Scheepers 448.*

W S C N E

mossii Thell.

Perennial herb. Basal leaves oblanceolate, entire or few-toothed. Racemes lax in fruit. Fruiting pedicels erect, slightly curving outwards. *Flowers white.* *Moss 13549.*

W S C N E

schinzii Thell.

(= *L. trifurcum sensu* Thell.)

Herb up to 450 mm tall. Fruiting pedicels appressed-erect, straight. Siliculae elliptic to ovate-oblong, shallowly emarginate. *Flowers white; November to February.* Disturbed places. *Mogg 16840.*

W S C N E

transvaalense Marais

(= *L. divaricatum* Aiton subsp. *ecklonii* Schrad. var. *vel f. microcarpum* Thell.)

Pubescent perennial herb, up to 250 mm tall. Pedicels puberulous on upper surface. Siliculae ovate-oblong to subcircular-oblong. *Flowers white; November to February.* Disturbed places. *Leendertz 354.*

W S C N E

virginicum L.*

Annual or biennial herb up to 0,75 m high. Basal leaves lyrate-pinnatifid, usually dying off before flowering; upper leaves oblanceolate or narrowly obovate, serrate.

Siliculae emarginate, with small apical wings. *Flowers white; December to February*. Disturbed places. Native to the United States of America. *Van Rooyen 2542*.

W S C N E

Matthiola R. Br. (s. Afr.: 2 spp.) 3042000

Marais. 1970. F.S.A. 13: 109–110.

torulosa (Thunb.) DC.

Perennial shrublet, up to 450 mm tall. All vegetative parts as well as sepals, ovary and fruit densely covered and grey with stellate and subsimple hairs and stalked glands. Leaves linear-ob lanceolate, 15–70 × 1,5–6,0 mm. Siliquae linear, 35–70 mm long. *Flowers green, dirty cream, creamy brown or dull purplish; October to December*. Limestone or calcareous soils. *Burt Davy 13229*.

W S C N E

Raphanus L. (s. Afr.: 2 spp.) 2950000

Marais. 1970. F.S.A. 13: 14–15.

raphanistrum L.*

Annual or biennial herb up to 0,8 m high. Petals 15–20 mm long, long clawed, blade obovate. Fruit 3–5 mm in diameter, breaking into 1-seeded portions, hard. *Flowers yellow; October to May*. Grassland, woodland, disturbed places. Native to Europe. *Stalmans 228*.

W S C N E

sativus L.

Annual or biennial herb up to 1 m high. Fruit 7–12 mm (or more) in diameter, not breaking into 1-seeded portions, spongy. *Flowers white; January*. A weed near habitations or cultivated land. *Breyer sub TRV 22031*.

W S C N E

Rapistrum Crantz (s. Afr.: 1 sp.) 2956000

Marais. 1970. F.S.A. 13: 16.

rugosum (L.) All.

(= *Myagrum rugosum* (L.) All.)

Annual herb, up to 0,8 m high. Upper segment of fruit globose or ovoid, beaked with persistent style. *Flowers pale yellow; November*. Grassland. *Van Wyk 1778*.

W S C N E

Rorippa Scop. (s. Afr.: 5 spp.) 2965000

Marais. 1970. F.S.A. 13: 105.

fluviatilis (E. Mey. ex Sond.) Thell. var. fluviatilis

(= *Nasturtium fluviatile* E. Mey. ex Sond.,
= *R. fluviatilis* (E. Mey. ex Sond.) Thell.)

Semi-aquatic herb. Leaves toothed. Stigma small, inconspicuous, not broader than stout style. *Flowers yellow; October to June*. Riverbanks, vleis. *Louw 1099*.

W S C N E

fluviatilis (E. Mey. ex Sond.) Thell. var. caledonica

(Sond.) Marais

(= *Nasturtium caledonicum* Sond.,
= *R. caledonica* (Sond.) R.A. Dyer)

Semi-aquatic herb. Leaves toothed. Stigma capitate, broader than slender style. *Flowers yellow; January to April*. Riverbanks, vleis. *Obermeyer sub TRV 35540*.

W S C N E

madagascariensis (DC.) H. Hara

Erect, annual herb, up to 500 mm tall. Stems leafy. Leaves lyrate-pinnatipartite. Petals 2,0–2,7 mm long. *Flowers yellow; August*. Riverbanks. *Codd 6185*.

W S C N E

nasturtium-aquaticum (L.) Hayek*

(= *Nasturtium officinale* R. Br.)

Caulescent perennial herb, up to 0,6 m high. Leaves pinnate. Racemes terminal. *Flowers white; September to March*. In water or in wet places. Native to Europe. *De Winter 363*.

W S C N E

nudiuscula Thell.

(= *Nasturtium elongatum* E. Mey. ex Burt Davy,
= *Nasturtium integrifolium* Szylszyl.)

Perennial herb, up to 0,6 m high. Basal leaves in a rosette; cauline leaves few, small. Petals 3,0–4,5 mm long. *Flowers yellow; October to February*. Grassland, moist places. *Codd 2164*.

W S C N E

Sinapis L. (s. Afr.: 2 spp.)

2945000

Marais. 1970. F.S.A. 13: 10–11.

arvensis L.*

Erect, branched, annual herb, up to 1 m high. Valves of fruits 3- or more-nerved. Fruits spreading, 20–40 mm long, 2,5–4,0 mm in diameter, beaked. *Flowers yellow; November to March*. Disturbed places. Native to the Mediterranean region. *Stalmans 1126*.

W S C N E

Sisymbrium L. (s. Afr.: 8 spp.)

2917000

Marais. 1970. F.S.A. 13: 110–117.

officinale (L.) Scop.*(= *Erysimum officinale* L.)

Annual or biennial herb, up to 0,9 m high, with simple hairs. Inflorescence ebracteate. Siliqua stoutly subulate, tapering, puberulous. *Flowers yellow; November*. Disturbed places. Native to Europe and Asia. *Repton 4884*.

W S C N E

orientale L.*(= *S. strigosum* Thunb. p.p.)

Annual or biennial herb, up to 1 m high, with simple hairs. Inflorescence ebracteate. Siliqua linear, terete, 50–85 × 1,2–1,5 mm, puberulous in lower half only. *Flowers yellow; May to August*. Disturbed places. Native to Europe and Asia. *Smith 328*.

W S C N E

thellungii O.E. Schulz(= *Brassica pachypoda* Thell.)

Erect, annual herb, up to 0,6 m high, with simple hairs. Inflorescence bracteate. All or only lower pedicels subtended by bracts. Siliquae ± compressed, puberulous. *Flowers yellow; October to May*. Grassland, disturbed sites. *Posthuma 35*.

W S C N E

turczaninowii Sond.(= *S. burchellii* DC. var. *turczaninowii* (Sond.) O.E. Schulz)

Erect herb, up to 450 mm tall, with simple hairs. Inflorescence ebracteate. Siliquae terete, 10–23 × 1,3–1,5 mm, strigose with coarse, thick-based hairs. *Flowers yellow; November to April*. Grassland, disturbed sites. *Acocks 20838*.

W S C N E

BURSERACEAE

Trees or shrubs, sometimes spiny, with aromatic resins. Leaves alternate, simple or 3-foliolate or imparipinnate, exstipulate. Flowers small. Calyx 3–5-fid or -partite. Petals 3–5, occasionally connate. Disc annular or cup-like, free or adnate to calyx tube. Stamens as many as or twice as many as petals, inserted at base of disc. Ovary superior, 2–5-locular. Fruit an ovoid or globose drupe, 1-seeded. Seed usually with a pseudo-aril.

Commiphora Jacq. (s. Afr.: 33 spp.) 4151000Van der Walt. 1973. *Bothalia* 11: 53–102.Van der Walt. 1986. *F.S.A.* 18, 3: 5–34.**africana (A. Rich.) Engl.**(= *C. calciicola* Engl.,= *Heudelotia africana* A. Rich.)

Many-stemmed shrub or small tree, up to 4 m high. Branchlets spine-tipped, pilose to tomentose. Leaves 3-foliolate; leaflets pilose to tomentose, broadly obovate or elliptic. Fruit subglobose. *Flowering October*. Shrub-thornveld, woodland, broken mopani veld. *Codd & Dyer 4571*.

W S C N E

angolensis Engl.(= *C. rehmannii* Engl.)

Many-stemmed shrub or bush, up to 2,5 m high. Leaves sparsely pilose to pubescent, 3-foliolate or imparipinnate; lamina up to 90 mm long; terminal leaflet elliptic to obovate, 35 × 20 mm. *Flowers yellow to green; October*. Sandy soil. *Van der Walt 19*.

W S C N E

edulis (Klotzsch) Engl.(= *C. chlorocarpa* Engl.,= *Hitzeria edulis* Klotzsch)

Many-stemmed shrub or small tree, up to 6 m high. Bark flaking in small yellowish, papery pieces. Leaves pinnate, pubescent but scabrous above, greyish green; leaflets narrowly elliptic to ovate, (30–)50(–65) × (20–)22(–30) mm, margin entire. *Flowers yellowish*

green; November to December. Woodland, broken mopani veld, sandy soil. *Codd & Dyer 4622*.

W S C N E

glandulosa Schinz(= *C. pyracanthoides* Engl. subsp. *glandulosa* (Schinz) Wild)

Polygamous or dioecious tree, up to 10 m high. Branchlets spine-tipped. Leaves simple; lamina obovate or elliptic, usually crenate-serrate. Calyx with large glandular hairs. *Flowers red; October*. Woodland, broken mopani veld. *Codd 4432; Van der Walt 52*.

W S C N E

harveyi (Engl.) Engl.(= *Protium africanum* Harv.)

Tree, up to 18 m high. Bark usually peeling in large brown papery pieces. Leaves and young branches glabrous. Leaves imparipinnate or 3-foliolate; lamina up to 150 mm long; leaflets oblanceolate, lanceolate or elliptic to ovate, margins crenate serrate. *Flowers yellowish green; November to December*. Mountainsides, kloofs, lowveld bush. *Codd 6714*.

W S C N E

marlothii Engl.

Tree, up to 9 m high. Bark peeling in large yellowish papery pieces. Leaves imparipinnate, pubescent to tomentose; leaflets obovate to broadly elliptic, 80 × 40 mm, margins crenate-serrate to finely lobed. Fruit more than 15 mm in diameter. *Flowers yellowish green;*

October to December. Mountainsides, granite hills.
Van der Walt 8.

W S C N E

merkeri *Engl.*

(= *C. viminea* Burtt Davy)

Tree, up to 5 m high. Bark grey with large black lenticels. Branchlets spine-tipped, smooth and purplish. Leaves simple or occasionally 3-foliolate, glaucous, margins crenate-serrate. Fruit ellipsoid, apiculate. *Flowers yellowish green; November to December.* Bushveld, mopani veld. *Codd 4835.*

W S C N E

mollis (*Oliv.*) *Engl.*

(= *C. webbschii* Engl.)

Tree, up to 8 m high. Branchlets and leaves pilose to tomentose. Leaves imparipinnate; leaflets elliptic, oblong-elliptic or obovate, often distinctly paler below, margins entire. Disc of flower 4-lobed. Pseudo-aril with 4 winged arms. *Flowers green to red; October.* Woodland, well-drained sandy soil. *Meeuse 10572.*

W S C N E

neglecta *I. Verd.*

Polygamous or dioecious, many-stemmed shrub or small tree, up to 8 m high. Branchlets spine-tipped, with a few scattered short hairs. Leaves 3-foliolate; leaflet margins entire or distal half finely crenate-serrate. *Flowers yellowish green; October to November.* Mountainsides, lowveld bush. *Codd & De Winter 5166.*

W S C N E

pyracanthoides *Engl.*

Polygamous or dioecious many-stemmed shrub or small tree, up to 3 m high. Bark yellow to green, flaking

in yellowish papery pieces to expose green underlayer. Branchlets spine-tipped. Leaves simple or 3-foliolate; lamina elliptic, narrowly obovate or obovate, margin finely crenate-serrate. *Flowers yellowish green to red; October.* Woodland, thornveld, broken mopani veld. *Van der Walt 57.*

W S C N E

schimperi (*O. Berg*) *Engl.*

(= *C. betschuanica* Engl.)

Shrub or small tree, up to 6 m high. Branchlets spine-tipped, glabrous. Leaves 3-foliolate; leaflets glabrous, margins coarsely crenate-serrate. Fruit ellipsoid, distinctly apiculate. Pseudo-aril membranous and without arms, putamen rugose. *Flowers reddish yellow; September to October.* Bushveld, woodland. *Codd 5437.*

W S C N E

tenuipetiolata *Engl.*

Tree, up to 12 m high. Bark usually peeling in large white papery pieces to expose glaucous underlayer. Leaves 3-foliolate or imparipinnate, glaucous, yellowish green or green; terminal leaflets elliptic, broadly elliptic or obovate, 12–65 × 7–30 mm. Fruit subglobose and not beaked. Pseudo-aril with 4 arms. *Flowers yellowish green; November to February.* Mopani veld, well-drained, sandy soil. *Codd 6698.*

W S C N E

zanzibarica (*Baill.*) *Engl.*

Tree, up to 7 m high. Bark grey, not peeling. Leaves pinnate, 3–5-jugate, glabrous, green; leaflets oblanceolate to narrowly elliptic, margin entire, terminal leaflet up to 70 × 35 mm. *Flowers yellowish green; October.* Arid lowveld. *Van Wyk 4917.*

W S C N E

BUXACEAE

Trees or shrubs, evergreen, monoecious. Leaves opposite, shortly petioled or sessile, entire. Flowers in sessile or shortly peduncled inflorescences. Sepals 4–6, usually 4 in male flower. Petals 0. Stamens 4–6, filaments exerted. Ovary superior, 3-locular; styles 3. Fruit a capsule, somewhat woody, globose or ovoid, horned with persistent styles. Seeds black, shiny, oblong.

Buxus *L.* (s. Afr.: 2 spp.)

4533000

Coates Palgrave. 1977. Trees of southern Africa: 454–456.

macowanii *Oliv.*

(= *Notobuxus macowanii* (Oliv.) E. Phillips)

Tree, up to 7 m high. Leaves ovate to ovate-oblong to linear, 15–30 × 7–18 mm. Fruit a brown, dehiscent capsule, 7 mm in diameter, crowned with 3 conspicuous horns. *Flowers green; January to May.* Riverine bush, bushveld, woodland, wooded kloofs. *Brusse 1931.*

W S C N E

natalensis (*Oliv.*) *Hutch.*

(= *Notobuxus natalensis* Oliv.)

Shrub or small tree, up to 10 m high. Leaves ovate-lanceolate, 60–110 × 20–50 mm, thinly leathery, distinctly opposite. Fruit a brown, dehiscent capsule, ± 20 mm long, crowned with 3 conspicuous horns. *Flowers green; August to September.* Evergreen forest. *Raal 1567.*

W S C N E

CABOMBACEAE

Aquatic herbs with perennial rhizomes. Stems coated with mucilage. Leaves alternate, with floating leaves peltate or sometimes with finely dissected, submerged leaves in addition. Flowers actinomorphic. Sepals 3. Petals 3, hypogynous. Stamens 3–18. Carpels 2–18, free. Fruiting carpels indehiscent.

Brasenia Schreb. (s. Afr.: 1 sp.) 2510000^{*}
Wild. 1961. F.Z. 1: 173–175.

schreberi J.F. Gmel.
Glabrous, aquatic herb. Submerged parts of plant covered with profuse, clear, slimy mucilage. Leaves float-

ing, peltate. *Flowers produced under water, purplish to brownish red; October to November.* Stagnant pools. *Codd & Obermeyer 10354.*

W S C N E

CACTACEAE

Perennial plants with variously modified, succulent stems, often spiny; sometimes epiphytes. Spines, branches and flowers arising from special sunken cushions or areoles which can be regarded as condensed lateral branches. Leaves usually rudimentary. Flowers bisexual, usually showy, regular. Sepals, petals, stamens and bracts numerous, spirally arranged. Ovary inferior, 1-locular. Fruit a juicy berry, sometimes dry and leathery.

Key partly after Obermeyer in F.S.A. 22: 145 (1976).

- 1a Plants with normal stems and leaves; flowers large, several from each areole **Pereskia**
- 1b Plants with succulent stems variously shaped; leaves 0 or few and then usually reduced and early deciduous; flowers solitary in each areole 2
- 2a Stems not jointed, ribbed **Cereus**
- 2b Stems jointed, not ribbed **Opuntia**

Cereus Mill. (s. Afr.: 1 sp.) 5401020
Bailey. 1977. Hortus Third: 250–251.

jamacaru DC.*
Shrub or tree, up to 5 m high. Ribs on stems 4–10, mostly 5, 40 mm deep; areoles 25–50 mm apart, spines 10–15, yellow to brown, needle-shaped, short, sometimes 20–30 on old branches, some up to 200 mm long, plant sometimes almost spineless. Fruit red. *Flowers white.* Escaped from cultivation, becoming a troublesome weed. Native to South America. *Glen 2522.*

W S C N E

Opuntia Mill. (s. Afr.: 11 spp.) 5417000
Obermeyer. 1976. F.S.A. 22: 149–154.

aurantiaca Lindl.*
Spreading and creeping shrublets, up to 1 m high. Joints semiterete, densely spiny, 15–25 mm wide. *Flowers lemon-yellow or golden yellow.* Garden escape becoming a weed. Native to South America. PRE material on loan.

W S C N E

ficus-indica (L.) Mill.*
(= *Cactus ficus-indica* L.,
= *O. maxima* Mill.)
Shrub or tree, up to 5 m high. Joints flattened, narrowly elliptic to ovate, 60–120 mm broad, fairly thick, glaucous, with straight margins; areoles small, ± 5 mm in diameter, with 3–6 greyish white spines, up to 30 mm long, or absent in older plants. Fruit ovoid to barrel-shaped, reddish or yellowish. *Flowers yellow or orange.* Escaped from cultivation, becoming a weed. Native to South America. *Barnard PRE 23276.*

W S C N E

imbricata (Haw.) DC.*
(= *Cereus imbricatus* Haw.)
Spreading shrub, up to 3 m high. Joints cylindrical, tuberculate. Leaves early deciduous or absent. Spines covered with papery sheaths, light brown, 8–30 per areole. *Flowers red, stamens and style purple.* Escaped from cultivation, becoming a weed. Native to Central America. PRE material on loan.

W S C N E

rosea DC.*
Shrub, 0.6–0.8 m high. Joints cylindrical, tuberculate. Spines covered with papery sheaths, whitish, up to 20 per areole, densely packed on joints. *Flowers wine-red.*

Escaped from cultivation, becoming a weed. Native to South America. PRE material on loan.

W S C N E

stricta (Haw.) Haw.*
(= *Cactus strictus* Haw.)

Dwarf shrub, 0.6–0.8 m high. Joints flattened, obovate, with several yellow-brown spines from areoles, or spines few or absent. Areoles small. Fruit obovoid, smooth, purple. *Flowers yellow*. Escaped from cultivation, becoming a weed. Native to South America. *Codd 10760*.

W S C N E

Pereskia Mill. (s. Afr.: 1 sp.)

5421000

Obermeyer. 1976. F.S.A. 22: 155–156.

aculeata Mill.*

Clambering or shrubby. Areoles with 1–3 straight spines near base of plant but towards top with pairs of short, hooked spines in leaf axils. *Flowers white, cream, yellow or pinkish; April to June*. Garden escape, forming impenetrable hedges. Native to South America. *Burger 109*.

W S C N E

CAMPANULACEAE

Herbs, usually with milky latex. Leaves alternate, without stipules. Flowers regular. Calyx tube usually fused to ovary. Petals 5, united. Stamens 5, free from corolla; anthers free. Ovary inferior. Fruit a capsule, often crowned by persistent calyx lobes.

Key after Dyer, Gen. 1: 638–639 (1975).

Capsule opening by a terminal cap, walls breaking down in fruit; small, prostrate, perennial herbs, often mat-forming *Craterocapsa*
Capsule opening regularly by terminal valves; annual or perennial herbs, sometimes shrublets *Wahlenbergia*

Craterocapsa Hilliard & B.L. Burt

(s. Afr.: 4 spp.) 8668010

Hilliard & Burt. 1973. Notes R. bot. Gdn Edinb. 32: 314–326.

tarsodes Hilliard & B.L. Burt

(= *Wahlenbergia montana* A. DC. var. *angustisepala* Brehmer,
= *Wahlenbergia montana* A. DC. var. *glabrata* Sond.)

A mat-forming, perennial herb. Leaves mostly rosetted at tips of branchlets. Flowers sessile, opening only 1 at a time, strictly terminal but soon overtopped by shoot from uppermost leaf axil and then appearing lateral. Base of style not surrounded by fleshy disc. *Flowers pale blue or white; October to May*. Stony grassland. *Stirton 5800*.

W S C N E

Wahlenbergia Schrad. ex Roth

(s. Afr.: 135 spp.) 8668000

Sonder. 1865. F.C. 3: 584.

Von Brehmer. 1915. Bot. Jb. 53: 9–143.

Dyer. 1934. Kew Bull. 6: 267.

Roessler. 1966. F.S.W.A. 136: 4–9.

Hilliard & Burt. 1971. Notes R. bot. Gdn Edinb. 31: 2.

Thulin. 1975. Symb. bot. ups. 21: 1–223.

Thulin. 1978. Bot. Notiser 131: 67–70.

Hilliard & Burt. 1979. Notes R. bot. Gdn Edinb. 37: 293.

Lammers. 1995. Taxon 44: 333–339.

androsacea A. DC.

Erect annual herb, up to 0.55 m high. Leaves rosulate, narrowly obovate to narrowly oblanceolate or spatulate, up to 25–130 × 6–18 mm. Stylar glands below base of style lobes. Testa smooth. *Flowers pale blue or mauve; October to January*. Grassland, sandy soil, rocky slopes. *Germishuizen 2926*.

W S C N E

banksiana A. DC.

Erect herb, up to 500 mm tall. Leaves linear, up to 12 mm long, 1.5 mm broad, margin cartilaginous, denticulate. Corolla 5.0–7.5 mm long, tube at least half the length of corolla and longer than calyx lobes. Testa almost smooth. *Flowers blue or mauve; November to April*. Grassland. *Crosby 207*.

W S C N E

brachiata (Adamson) Lammers

(= *Lightfootia brachiata* Adamson)

Prostrate herb. Stems slender, 150–300 mm long, upper parts and inflorescence zigzag, with long internodes. Leaves linear-oblong, 5–8 × 1–2 mm, reflexed. *Flowers blue or violet; November*. Mist belt on mountains. *Pott 4707*.

W S C N E

brevisquamifolia Brehmer

Herb, up to 350 mm tall. Leaves oblong, acute to squamiform. Capsule subfusiform, 2-locular. *Flowering October*. No specimens in PRE.

W S C N E

capillacea (L.f.) A. DC. subsp. capillacea

(= *Campanula capillacea* L.f.,

= *W. pinnata* Compton var. *simplicifolia* Compton)

Erect or ascending herb, up to 300 mm tall. Leaves linear, 5–30 mm long, margin not cartilaginous. Corolla 5–13 mm long, tube at least half the length of corolla and longer than calyx lobes. Testa reticulate. *Flowers blue-mauve*. Montane grassland. *Brusse 5061*.

W S C N E

denticulata (Burch.) A. DC. *sens. lat.*

(= *Campanula denticulata* Burch.,
= *Lightfootia denticulata* (Burch.) Sond.,
= *Lightfootia denticulata* (Burch.) Sond. var. *transvaalensis* Adamson)

Herb. Stems decumbent or ascending, 100–1000 mm long. Leaves and calyx lobes with denticulate, cartilaginous margins. Inflorescence terminal, lax or variously contracted. *Flowers blue to white or yellow; December to April.* Grassland. *Smith 156.*

W	S	C	N	E
---	---	---	---	---

dieterlenii (E. Phillips) Lammers

(= *Lightfootia caledonica* Sond. non *W. caledonica* Sond.,
= *L. dieterlenii* E. Phillips)

Erect or sprawling shrublet, up to 500 mm tall. Leaves all similar, ascending, crowded, fasciculate, linear, 7–15 × 2 mm. *Flowers white or pale blue; November to April.* Grassland, rocky places. *J.B.G. 3243.*

W	S	C	N	E
---	---	---	---	---

epacridea Sond.

Erect herb, up to 400 mm tall. Leaves widely scale-like, adpressed, margin slightly thickened, pilose. Flowers elongately bell-shaped. *Flowers blue; January to March.* Montane grassland. *Drews 238.*

W	S	C	N	E
---	---	---	---	---

grandiflora Brehmer

Herb. Like *W. undulata* but with very large flowers; should be placed under that species.

huttonii (Sond.) Thulin

(= *Lightfootia huttonii* Sond.)

Erect perennial herb, up to 350 mm tall. Leaves alternate, sessile, numerous and densely set, 5–15 mm long. Flowers sessile, rather few in a ± contracted, often headlike inflorescence. Corolla tube shorter than 1 mm. *Flowers blue or mauve; October to April.* Grassland. *Welman 420.*

W	S	C	N	E
---	---	---	---	---

krebsii Cham. subsp. **krebsii**

(= *W. zeyheri* H. Buck)

Erect perennial herb, up to 500 mm tall. Leaves linear to oblanceolate or obovate, scattered along stem or crowded towards base. Flowers in a lax inflorescence. Pedicels 2–25 mm long. *Flowers white, blue or violet; December to February.* Grassland. *Devenish 338.*

W	S	C	N	E
---	---	---	---	---

lycopodioides Schltr. & Brehmer

Herb forming dense tufts, up to 160 mm tall. Stem leafy. Leaves alternate, narrowly lanceolate to linear, 4–5 × 0.5 mm, slightly pilose. Flowers terminal, shortly pedicellate. *Flowers white or pale blue; February to June.* Montane grassland, fissures of rocks. *Codd 9853.*

W	S	C	N	E
---	---	---	---	---

madagascariensis A. DC.

(= *W. oppositifolia* DC.)

Prostrate or decumbent herb. Stems 100–500 mm long, dichotomously branched. Leaves opposite, sessile to subpetiolate, elliptic to narrowly ovate, acute, cuneate at base, margin cartilaginous, ± undulate-crenate. *Flowers white; November to March.* Forest, forest margins, along streams. *Scheepers 1191.*

W	S	C	N	E
---	---	---	---	---

magaliesbergensis Lammers

(= *Lightfootia paniculata* Sond.)

Herb, up to 400 mm tall. Stems many from woody base, wiry. Leaves alternate, linear, the lower 10–20 mm long, the upper shorter and distant. Flowers in a lax panicle with divaricate branches. *Flowers white; October to April.* Grassland, rock crevices. *Codd 7910.*

W	S	C	N	E
---	---	---	---	---

paniculata (Thunb.) A. DC.

(= *Campanula paniculata* Thunb.)

Prostrate herb. Leaves filiform, short, apex recurved. *Flowers purple; November and April.* Grassland. *Van Wyk 1775.*

W	S	C	N	E
---	---	---	---	---

rhytidospema Thulin

Decumbent perennial herb. Stems filiform, up to 150 mm long. Leaves narrowly elliptic to broadly elliptic, up to 9 × 2.0–3.2 mm, thin. Inflorescence frondose, 1- to few-flowered, with flowers terminal or in dichotomous forks. Testa rugulose. *Flowers white or mauve; January to March.* Deep shade under large overhanging rocks in moist ground. *Galpin 13822.*

W	S	C	N	E
---	---	---	---	---

rivularis Diels

Leaves ovate to narrowly ovate, up to 40 × 20 mm, apex obtuse to acute. Corolla ± 20 × 15 mm. *Flowers cream or pale yellow, outer surface of corolla with mauve median line; January to March.* Grassland, stream-banks. *Isaacs 21.*

W	S	C	N	E
---	---	---	---	---

squamifolia Brehmer

Herb, up to 450 mm tall. Stems erect, branched at base. Leaves narrowly scale-like, apex acute, 2–3 times as long as broad, margin slightly thickened, not pilose. *Flowers purple; December to May.* Grassland. *Meeuse 10113.*

W	S	C	N	E
---	---	---	---	---

subfusiformis Brehmer

Herb. Anthers upright. Capsule subfusiform. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

tortilis Brehmer

Herb, up to 400 mm tall. Anthers contorted. Leaves convolute. *Flowers blue; April.* No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

transvaalensis Brehmer

Herb, up to 350 mm tall. Leaves sessile, narrowly lanceolate to obovate, cuneate or obtuse, in basal tuft. Stem simple, elongate, somewhat branched above, glabrous. Capsule obovate, as long as calyx lobes. No specimens in PRE.

W S C N E

undulata (L.f.) A. DC.

(= *W. caledonica* Sond.,
= *W. dinteri* Brehmer)

Erect perennial or annual herb, up to 0,9 m high. Stems leafy, hirsute or glabrous. Leaves lanceolate to linear, up to 10–70 × 1,5–10,0 mm, margin cartilaginous, ± undulate-crenate. Inflorescence lax with pedicels up to

10–25 mm long. Flowers blue, white, yellow or purple; November to April. Grassland, vleis, moist situations. *Germishuizen 3941*.

W S C N E

virgata Engl.

(= *W. subnuda* Conrath)

Erect, perennial herb, up to 0,7 m high. Leaves few and inconspicuous, usually less than 7 mm long and 2 mm wide. Testa reticulate. Flowers white or blue; September to May. Grassland, along streams, montane grassland. *Stalmans 181*.

W S C N E

CANELLACEAE

Trees. Leaves shortly petioled, oblong or oblong-elliptic, glossy above, aromatic because of glands present. Flowers bisexual. Calyx 3-parted. Petals 8 or 10 in 2 rows, outer 4 or 5 thick, inner 4 or 5 thin. Stamens 10, connate into a column ± equalling petals in length. Ovary ellipsoid; style protruding through staminal column. Fruit a blackish berry with leathery skin and immersed glands.

Warburgia Engl. (s. Afr.: 1 sp.)

5256000

Codd. 1976. F.S.A. 22: 40–41.

slightly involute, with a bitter taste. Flowers yellow or green; January and April to May. Submontane forest. *Codd 8733*.

W S C N E

salutaris (Bertol. f.) Chiov.

(= *W. breyeri* Pott,
= *W. ugandensis* Sprague)

Tree, up to 10 m high. Leaves shiny above, paler below; densely pellucid-dotted, shortly petiolate, margin

CANNABACEAE

Erect annual herbs, dioecious (male and female flowers on different plants). Leaves alternate or opposite, digitately compound, 5–11-partite or 1–3-partite in upper part of plant, all leaf parts serrate; stipules lateral. Male flowers: fascicled; perianth 5-parted; stamens 5. Female flowers: crowded under convolute bracts.

Cannabis L. (s. Afr.: 1 sp.)

1973000

Henderson & Anderson. 1966. Common weeds in South Africa: 552.

enclosed in a sheath-like bract copiously dotted with glands, secreting a narcotic resinous substance. Flowers green; November to May. Gardens, open veld and cultivated land. *Leendertz 8192*.

W S C N E

sativa L.

Erect annual herb, up to 4 m high. Leaves with 5–7 lobes. Female flowers without a perianth but with ovary

CAPPARACEAE

Herbs, shrubs or trees, sometimes scandent. Leaves alternate, simple or digitately compound, usually without stipules. Flowers regular or irregular. Petals 4, free, often stalked. Stamens 4 to many. Ovary superior, stalked; style short or absent. Fruit a long, narrow capsule opening by means of 2 valves, or a berry.

Key after Killick in F.S.A. 13: 119 (1970).

- 1a Herbs; fruit a cylindrical, dehiscent capsule Cleome
- 1b Woody plants; fruit a globose, ellipsoid, oblong or cylindrical, usually indehiscent berry 2
- 2a Androphore elongated, longer than sepals Cadaba
- 2b Androphore short, not as long as sepals 3
- 3a Calyx rupturing transversely; fruit with 8–10 longitudinal ribs Thilachium
- 3b Calyx not rupturing transversely; fruit without ribs 4
- 4a Receptacle or calyx tubular Maerua
- 4b Receptacle or calyx not tubular 5
- 5a Sepals imbricate, orbicular, rarely ovate; branches with stipulate spines Capparis
- 5b Sepals valvate, lanceolate; branches without spines Boscia

Boscia Lam. (s. Afr.: 9 spp.) 3106000
Toelken. 1970. F.S.A. 13: 150–159.

albitrunca (Burch.) Gilg & Gilg-Ben. var. albitrunca
Tree (or rarely a shrub), up to 7 m high. Leaves fascicled, with lateral veins indistinct and similar in colour on both surfaces. Fruit a berry, 5–12 mm in diameter, glabrous. *Flowers green; September to December.* Bushveld. *Mogg 16927.*
[W][S][C][N][E]

angustifolia A. Rich. var. corymbosa (Gilg) DeWolf
(= *B. corymbosa* Gilg)
Shrub or tree, up to 4 m high. Leaves densely hairy on undersurface, upper surface glabrous or papillose. Corona with filiform appendages. *Flowers greenish yellow; February.* Bush groups, stony hills. *Van der Schijff 3156.*
[W][S][C][N][E]

foetida Schinz subsp. minima Toelken
Cushion-like dwarf shrub, up to 300 mm tall, with decumbent branches. Pedicels with spreading hairs. *Flowers green; October.* Scrub. *Codd 8013.*
[W][S][C][N][E]

foetida Schinz subsp. rehmanniana (Pestal.) Toelken
(= *B. rehmanniana* Pestal.)
Tree, up to 4 m high, with 1 trunk. Much-branched. Leaves fascicled. Pedicels glabrous. Fruit hairy. *Flowers greenish white; September to October.* Bushveld. *Zwanziger 8.*
[W][S][C][N][E]

mossambicensis Klotzsch
(= *B. welwitschii* Gilg)
Shrub or tree, up to 5 m high. Leaves slightly hairy, becoming glabrous, with lighter reticulate venation visible on both surfaces. Sepals 4–6 mm long. Gynophore 4–8 mm long. *Flowers green; February.* Scrub. *Van der Schijff 4212.*
[W][S][C][N][E]

Cadaba Forssk. (s. Afr.: 4 spp.) 3109000
Marsh. 1970. F.S.A. 13: 171–175.

aphylla (Thunb.) Wild
(= *Cleome aphylla* Thunb.)
Shrub or small tree, up to 3 m high. Leaves absent, except on young branches. Stamens 8 or more. Nectary hooded or saucer-shaped, with no conspicuous neck. *Sepals yellowish green, orange or dark red. Flowering August to January.* Mixed scrub, sandy loam soil. *Bremekamp & Schweickerdt 462.*
[W][S][C][N][E]

natalensis Sond.
Shrub or small tree, up to 4 m high. Young stems, leaves, pedicels and all young parts glabrous. Leaves present. Pedicel slender, longer than 10 mm. Nectary with recurved neck. *Flowers whitish green; June to August.* Shrubland. *Thorncroft 2482.*
[W][S][C][N][E]

termitaria N.E. Br.
Much-branched shrub, up to 3 m high. Young stems, leaves, pedicels and all young parts hoary or papillose-farinose. Leaves present. Pedicel shorter than 10 mm. Nectary flask-shaped, with neck adnate to androgynophore. *Flowers reddish brown; July to June.* Bushveld. *Codd 1699.*
[W][S][C][N][E]

Capparis L. (s. Afr.: 5 spp.) 3101000
Toelken. 1970. F.S.A. 13: 144–150.

fascicularis DC. var. fascicularis
(= *C. rudatisii* Gilg & Gilg-Ben.,
= *C. transvaalensis* Schinz)
Shrub, scrambler or climber. Leaves oblong, oblong-elliptic to elliptic-lanceolate, usually emarginate. Inflorescence with 1–3 flowers in axils of leaves towards end of branches. *Flowers white; April to July.* Bushveld. *Meeuse 9318.*
[W][S][C][N][E]

sepiaria L. var. subglabra (Oliv.) DeWolf
(= *C. subglabra* (Oliv.) Gilg & Gilg-Ben.)
Climbing shrub. Young branches with appressed hairs. Inflorescences on short lateral branches. Sepals 3 or 4 mm, glabrous. Fruit ± 10 mm in diameter. *Flowers white; July to October.* Bushveld. *Van der Schijff 926.*
[W][S][C][N][E]

tomentosa Lam.(= *C. corymbifera* E. Mey. ex Sond.)

Scrambler, shrub or tree-like. Branches yellow tomentose, with recurved, tomentose spines. Sepals tomentose. Gynophore 25–50 mm long. Fruit 30–50 mm in diameter. *Flowers white; August to November*. Bushveld. *Lang sub TRV 32114*.

W S C N E

Cleome L. (s. Afr.: 21 spp.)

3082000

Codd & Kers. 1970. F.S.A. 13: 119–140.

angustifolia Forssk. subsp. **diandra** (Burch.) Kers

Erect, little-branched herb, up to 0,8 m high. Stems usually aculeolate-glandular towards base. Bracts 1-foliate. Median petals usually equalling lateral ones in length, seldom only three-quarters of these. *Flowers yellow with purple centre; February*. Red sandy soil. *Liengme 531B*.

W S C N E

angustifolia Forssk. subsp. **petersiana** (Klotzsch ex Sond.) Kers

Erect, glaucous herb, up to 1,2 m high. Bracts usually 3-foliate. Stem smooth. Leaves 3–9(–13)-foliolate; leaflets linear-filiform. *Flowers yellow; October to March*. Bushveld, disturbed land. *Codd & De Winter 5006*.

W S C N E

conrathii Burt Davy

Erect annual herb, up to 250 mm tall. Stems glabrous. Leaves 3-foliolate; leaflets linear-filiform. Petals 5–8 mm long. *Flowers pink to mauve; May*. Grassland. *Sutton 428*.

W S C N E

gynandra L.(= *Gynandropsis gynandra* (L.) Briq., = *Gynandropsis pentaphylla* (L.) Briq.)

Erect annual herb, up to 0,6 m high. Leaves compound. Stamens borne on long androgynophore, well exerted from corolla. *Flowers white to rose-pink; November to April*. Bushveld, cultivated land. *Zambatis 627*.

W S C N E

hirta (Klotzsch) Oliv.

Erect herb, up to 500 mm tall. Stems viscid glandular-hirsute. Leaves 5–9-foliolate. Petals clawed, at least 2 median petals with yellow band across middle. Capsule 90–150 mm long. *Flowers pink to purple; July to June*. Grassland. *Retief 1349*.

W S C N E

kalachariensis (Schinz) Gilg & Gilg-Ben.(= *C. sulfurea* Brem. & Oberm.)

Erect annual herb, up to 0,75 m high. Leaflets linear-spathulate to oblanceolate-oblong. Gynophore glabrous.

Capsule erect. Seed surface transversely rugose. *Flowers yellow; January to March*. Bushveld, sandy flats. *Pienaar 385*.

W S C N E

macrophylla (Klotzsch) Briq.

Erect annual herb, up to 400 mm tall. Leaves 3-foliolate. Two upper petals with bright yellow median spot surrounded by dark purple line. Stamens fertile, subequal, borne on short receptacle. *Flowers mauve; November to March*. Grassland, bushveld, open woodland. *Codd 5951*.

W S C N E

maculata (Sond.) Szyszyl.(= *Polanisia maculata* Sond., = *Tetratelia maculata* (Sond.) Sond.)

Erect annual herb, up to 300 mm tall. Leaves 3–5-foliolate. Two upper petals with median yellow band margined with purple. Stamens fertile and sterile, borne on short receptacle, fertile ones longer. *Flowers pink to mauve; December to April*. Woodland, rocky slopes, overgrazed veld. *Leendertz 3688*.

W S C N E

monophylla L.

Erect annual herb, up to 500 mm tall. Leaves all simple. Two upper petals with transverse yellow band, outlined in purple. *Flowers pink to pale mauve; November to May*. Cultivated land, hills. *Botha 1356*.

W S C N E

oxyphylla Burch. var. **oxyphylla**(= *C. breyeri* Burt Davy)

Erect woody herb, up to 0,6 m high. Leaflets 3–7-foliolate. Petals cuneate at base, not clawed, with yellow area at base, 9–15 × 5–9 mm. Stamens 8–12. *Flowers pink; November to March*. Rocky hillsides. *Van Wyk 5214*.

W S C N E

oxyphylla Burch. var. **robusta** Kers

Erect woody herb, up to 1 m high. Leaflets 5–9-foliolate. Petals cuneate at base, not clawed, with yellow area at base, 15–20 × 9–11 mm. Stamens 20–24. *Flowers pink; November to March*. Rocky hillsides. *Codd & Dyer 3852*.

W S C N E

rubella Burch.(= *C. rupestris* Sond.)

Erect annual herb, up to 400 mm tall. Stems viscid-glandular pubescent. Leaves 5–7-foliolate, petioles short. Petals without yellow, transverse bands, 5–8 mm long. *Flowers mauve-pink to rose; July to June*. Bushveld, grassland. *Hanekom 2261*.

W S C N E

Maerua Forssk. (s. Afr.: 11 spp.) 3112000
Killick. 1970. F.S.A. 13: 159–171.

angolensis DC.
Erect tree, up to 10 m high. Leaves elliptic or ovate, green, usually glabrous, chartaceous. Receptacle cylindric, 10–16 mm long, usually glabrous. Fruit moniliform. *Flowers white; August to December.* Savanna, scrub. *Meeuse 9722, Bruce & Kies 40.*
W S C N E

caffra (DC.) Pax
(= *M. triphylla* (Thunb.) T. Durand & Schinz,
= *Nieburhia triphylla* (Thunb.) Wendl.)
Shrub or tree, up to 9 m high. Leaves 3–5-foliolate; leaflet apex acute to rounded, veins immersed. Inflorescence corymbose at ends of branches. Petals 0. Fruit oblong-ellipsoid, up to 45 × 33 mm. *Flowers white; August to October.* Savanna, forest. *Germishuizen 953, Codd 733.*
W S C N E

edulis (Gilg & Gilg-Ben.) DeWolf
(= *Courbonia glauca* (Klotzsch) Gilg & Gilg-Ben.)
Small glaucous shrub, up to 1 m high. Leaves simple, ovate. Sepals usually 3. Fruit smooth, globose, borne on recurved gynophore. *Flowers greenish white; July to June.* Woodland. *Van der Schijff 5685.*
W S C N E

junceae Pax subsp. crustata (Wild) Wild
(= *M. maschonica* Gilg)
Small shrub, straggler or climber, up to 5 m high. Leaves 3–5-foliolate; leaflets 3 times longer than broad. Inflorescence racemose at ends of branches.

Fruit ellipsoid, corrugated (rough). *Flowers white; August to December.* Woodland, streambank bush. *Killick 3843, Codd 4368.*
W S C N E

parvifolia Pax
(= *M. legatii* Burt Davy)
Spreading, virgate shrub, up to 2 m high. Leaves simple, obovate, 4–30 × 1–15 mm, petioles 5–15 mm long. Petals (0–3)4. Fruit cylindric, torulose or moniliform, ending in a sharp apex. *Flowers white; August to October.* Savanna or scrub. *Codd 5702.*
W S C N E

rosmarinoides (Sond.) Gilg & Gilg-Ben.
(= *Nieburhia rosmarinoides* Sond.)
Tree or much-branched shrub, up to 5 m high. Leaves 3–5-foliolate, petioles 6–25 mm long; leaflets linear to narrowly elliptic. Disc of unequally laciniate lobes. *Flowers dull yellow to white; October to November.* Grassland, woodland, streambanks. *Raal 651.*
W S C N E

Thilachium Lour. (s. Afr.: 1 sp.) 3113000
Killick. 1970. F.S.A. 13: 175–177.

africanum Lour.
Shrub or scrambler, up to 3 m high. Calyx rupturing transversely, ‘cap’ often remaining attached on one side. Stamens many, on a columnar androphore. *Flowers white; October to December.* Hillsides, riverbanks. *Jones 16.*
W S C N E

CARYOPHYLLACEAE

Herbs with ± swollen nodes. Leaves opposite, each pair joined at base around node, usually without stipules. Flowers regular. Petals 5, free, tips often deeply cleft. Stamens 10, free. Ovary superior, 1-locular, with numerous ovules; styles 5, separate. Fruit a capsule, opening by means of teeth at tip.

Key after Dyer, Gen. 1: 142 (1975).

- 1a Sepals free or very nearly so 2
- 1b Sepals united into a short or long tube 8
- 2a Stipules absent 3
- 2b Stipules present 4
- 3a Stamens 5; styles 3 or occasionally 2 *Stellaria*
- 3b Stamens 10; styles 5 or occasionally 4 *Cerastium*
- 4a Sepals scarious, long-acuminate *Polycarpaea*
- 4b Sepals herbaceous 5
- 5a Sepals winged up the back (keeled) and sharply prominent in fruit *Polycarpon*
- 5b Scpals not winged up the back 6
- 6a Petals 2–4-lobed or -partite *Drymaria*
- 6b Pctals entire or slightly dentate or emarginate 7
- 7a Styles 5 *Spergula*
- 7b Styles 3 *Spergularia*

- 8a Calyx tube with commissural veins alternating with mid-veins of sepals; calyx without basal bracts, styles 3–5 *Agrostemma*
 8b Calyx tube without commissural veins alternating with mid-veins of sepals 9
 9a Styles 3; calyx with 10 principal veins, calyx bracts lacking; gynophore present *Silene*
 9b Styles 2 10
 10a Calyx with 5 wings *Vaccaria*
 10b Calyx with numerous parallel, often obscure, veins, invested at base by 4–10 calyx bracts; gynophore absent *Dianthus*

***Agrostemma* L. (s. Afr.: 1 sp.) 2488000**

Chater. 1964. Fl. Europ. 1: 157.

githago* L.(= *Lychnis githago* (L.) Scop.)

Straggling herb, up to 1 m high, covered with long appressed greyish hairs. Seeds usually 3 mm or more, with prominent acute tubercles. *Flowers dull purple or white; October.* Weed in cultivated land. Native to the Mediterranean region. *Burt Davy 14628.*

W S C N E

***Cerastium* L. (s. Afr.: 6 spp.) 2430000**

Wild. 1961. F.Z. 1: 346–349.

***arabidis* E. Mey. ex Fenzl**(= *C. dregeanum* Fenzl)

Erect, slender annual herb, up to 460 mm tall. Leaves narrowly ovate to ovate, sessile. Style with only upper two-thirds papillate. Fruit a membranous capsule, splitting into 10 short lobes above. *Flowers white; October to January.* Vleis, damp places. *Pott 5117.*

W S C N E

***capense* Sond.**

Erect, slender annual herb, up to 400 mm tall. Leaves narrowly ovate, sessile. Style clothed with papillae all the way. Fruit a membranous capsule, splitting into 10 short lobes above. *Flowers white; October to November.* Damp, shady places, garden weed. *Repton 3213.*

W S C N E

***indicum* Wight & Arn.**(= *C. africanum* (Hook. f.) Oliv.,= *C. indicum* Wight & Arn. var. *ruwenzoriense* (F.N. Williams) Möschl)

Herb with spreading and ascending branches, up to 0.75 m high. Capsule equalling or only slightly exceeding persistent sepals. *Flowers white; December to January.* In scrub. *Devenish 964.*

W S C N E

***Dianthus* L. (s. Afr.: 15 spp.) 2502000**

Hooper. 1959. Hooker's Icon. Pl. 7: 17–58.

basuticus* Burt Davy subsp. *basuticus* var. *basuticus(= *D. micropetalus* Ser. var. *galpinii* Burt Davy)

Caespitose, glabrous herb, up to 400 mm tall. Petal lamina 6–10 mm long, obovate, spreading, margin

finely dentate. Acumen of lower pair of bracts 0.5–1.0 mm long. *Flowers pink; November to March.* Grassland. *Germishuizen 2831.*

W S C N E

***basuticus* Burt Davy subsp. *basuticus* var. *grandiflorus* Hooper**

Glabrous, densely caespitose herb, up to 300 mm tall. Petal lamina 10–13 mm long, obovate-dentate or sometimes shallowly lacero-fimbriate on antical margin. Upper bracts with herbaceous acumen. *Flowers pink; January to March.* Grassland. *Galpin 9833.*

W S C N E

***micropetalus* Ser.**

Slender, caespitose, glaucous herb, up to 400 mm tall. Petal lamina small, up to 5 mm long, deltoid or obovate, often recurved, margin crenulate or coarsely dentate-incised. *Flowers white or pale purplish pink; November to March.* Vleis. *Louw 813.*

W S C N E

mooiensis* F.N. Williams subsp. *mooiensis* var. *mooiensis(= *D. nelsonii* F.N. Williams)

Glabrous, glaucous, caespitose herb, up to 0.6 m high. Leaves on flowering shoot rigid, 3–5 mm wide at middle. Sheath length ± equalling leaf width. Petal lamina lacero-fimbriate on antical margin. *Flowers white or pale pink; October to January.* Grassland. *Comins 893.*

W S C N E

***mooiensis* F.N. Williams subsp. *mooiensis* var. *dentatus* Burt Davy**

Glabrous, glaucous, caespitose herb, up to 500 mm tall. Leaves on flowering shoots rigid, 3–5 mm wide at middle. Sheath length ± equalling leaf width. Petal lamina dentate on antical margin. *Flowers white to rose pink; November to January.* Grassland. *Rademacher sub TRV 8194.*

W S C N E

mooiensis* F.N. Williams subsp. *kirkii* (Burt Davy)Hooper*(= *D. kirkii* Burt Davy)

Glabrous, pale green or glaucous, caespitose herb, up to 400 mm tall. Leaves on flowering shoot not rigid. Sheath length 1.5–2 times the leaf width. Petal lamina lacero-fimbriate on antical margin. *Flowers white or pale pink; November to April.* Grassland, crevices between rocks. *Mogg 15139.*

W S C N E

transvaalensis *Burt Davy*(= *D. scaber* Thunb. var. *graninifolius* Fenzl ex Szyszyl.)

Erect, caespitose, glabrous herb, up to 400 mm tall, generally with a tuft of leaves at base of inflorescence axis. Calyx bracts 2(3), cuspidate. *Flowers white or pink; October to February.* Grassland. *Codd 3679.*

W S C N E

zeyheri *Sond.* subsp. **zeyheri**(= *D. meciostocalyx* F.N. Williams,= *D. serpa* Ficalho & Hiern)

Robust, glaucous or subglaucous, tufted herb, up to 0.75 m tall. Calyx 28–45 mm long. Petal lamina 10–24 mm long, fimbriate or lacerate on antical margin. *Flowers white; November to March.* Grassland, hillsides. *Van Rooyen 2074.*

W S C N E

zeyheri *Sond.* subsp. **natalensis** *Hooper*(= *D. colensoi* F.N. Williams)

Robust, glabrous herb, up to 0.6 m high. Calyx 28–45 mm long. Petals (8–)11(–15) mm long, petal lamina finely and sometimes rather uniformly dentate on antical margin. *Flowers pale pink to mauve; November to February.* Grassland. *Schlechter 3856.*

W S C N E

Drymaria *Willd. ex Roem. & Schult.*

(s. Afr.: 1 sp.)

2452000

Wild. 1961. F.Z. 1: 344–346.

cordata (*L.*) *Willd.* subsp. **diandra** (*Blume*) *J.A. Duke*

Small, soft, trailing herb. Leaves broadly ovate, apex mucronate, base truncate, 3-nerved. *Flowers white; December to April.* Moist, shady places. *Scheepers & Schlieben 5.*

W S C N E

Polycarpaea *Lam.* (s. Afr.: 2 spp.) 2455000

Podlech. 1967. F.S.W.A. 31: 2–3.

corymbosa (*L.*) *Lam.*(= *Achyranthes corymbosa* L.)

Erect annual herb, up to 300 mm tall. Leaves linear, whorled. Stipules whitish, membranous, margin not ciliate in upper half. Sepals glabrous. *Flowers white, pink, purplish or rich brown; January to June.* Hillsides, streambanks, waste places, roadsides. *Herman 184.*

W S C N E

eriantha *Hochst. ex A. Rich.* var. **effusa** (*Oliv. emend. Pax*) *Turrill*

Annual herb, up to 190 mm tall. Leaves linear, whorled. Stipules whitish, membranous, margin ciliate in upper half. Sepals glabrous. *Flowers silvery pink or white; May.* Hillsides. *Leemann 122.*

W S C N E

Polycarpon *L.* (s. Afr.: 2 spp.)

2453000

Chater. 1964. Fl. Europ. 1: 153.

Bond & Goldblatt. 1984. Jl S. Afr. Bot., Suppl. 13: 222.

tetraphyllum *L.f.**

Prostrate herb or suberect annual, up to 200 mm tall. Leaves green, mostly in whorls of 4. Inflorescence lax, spreading, much-branched. *Flowers green and white; September to December.* Waste places. Native of Europe. *Strey 7903.*

W S C N E

Silene *L.* (s. Afr.: 15 spp.)

2490000

Wild. 1961. F.Z. 1: 350–355.

Masson. 1989. Candollea 44,2: 485–491.

Genus under revision, species names according to Jordaan in Arnold & De Wet, Plants of southern Africa: names and distribution (1993).

bellidioides *Sond.***burchellii** *Oth* var. **burchellii****burchellii** *Oth* var. **angustifolia** *Sond.***burchellii** *Oth* var. **latifolia** *Sond.***clandestina** *Jacq.***gallica** *L.****undulata** *Aiton*(= *S. capensis* *Oth*)**Spergula** *L.* (s. Afr.: 1 sp.)

2449000

Wild. 1961. F.Z. 1: 346.

Henderson & Anderson. 1966. Common weeds in South Africa: 140–141.

arvensis *L.**

Erect to suberect annual herb, up to 300 mm tall. Leaves in dense, opposite fascicles, narrowly linear, glandular-pubescent to glabrous. Capsule membranous, splitting into 5 halves. *Flowers green and white; December to May.* Weed of waste places and cultivated lands. Native of Europe and Asia. *Kings 1760.*

W S C N E

Spergularia (*Pers.*) *J. & C. Presl*

(s. Afr.: 4 spp.)

2450000

Monnier & Ratter. 1964. Fl. Europ. 1: 154–156.

Monnier. 1975. Candollea 30: 121–153.

media (*L.*) *C. Presl**

Perennial herb, up to 400 mm tall. Stipules on young stems connate for more than half their length, broadly

triangular, not acuminate. Capsule more than 6 mm in diameter. *Flowers white or pink; June*. Edges of pans, sandy soil. Native to Europe. *Allan 178*.

W S C N E

Stellaria L. (s. Afr.: 3 spp.) 2429000

Wild. 1961. F.Z. 1: 349–350.

Henderson & Anderson. 1966. Common weeds in South Africa.: 142–143.

media (L.) Vill.*

Diffuse, slender, annual herb, up to 150 mm tall. Stems glabrous except for line of hairs from within leaf base to between next pair above. *Flowers white; May to November*. A common weed in gardens. Native to Europe and Asia. *Ellery 255*.

W S C N E

pallida (Dumort.) Piré

Prostrate annual herb. Petals minute, shorter than sepals. Anthers 2 or 3. *Flowers white; January to December*. Disturbed areas. *Adams sub TRV 12959*.

W S C N E

Vaccaria Medik. (s. Afr.: 1 sp.) 2501000

Chater. 1964. Fl. Europ. 1: 186.

Henderson & Anderson. 1966. Common weeds in South Africa: 134–135.

pyramidata Medik.*

(= *Saponaria vaccaria* L.,

= *V. vulgaris* Host)

Erect annual herb, up to 0,6 m high. Leaves opposite, sessile. Calyx 5-winged, 5-lobed, inflating as seeds ripen. *Flowers pink; September to March*. Weed in lawns and fields. Native to Europe and Asia. *Onderstall 763*.

W S C N E

CELASTRACEAE

Trees or shrubs, sometimes scandent, armed or unarmed. Leaves alternate or opposite; stipules minute. Flowers small, regular, white or greenish, with fleshy, nectar-secreting disc surrounding ovary. Petals 5, free. Stamens 5, free, alternating with petals, arising from margin of disc. Ovary superior but partly sunken into disc; style short, often 3-lobed. Fruit a capsule or drupe. Seeds often ± enclosed in brightly coloured aril.

Key after Dyer, Gen. 1: 332 (1975).

- 1a Leaves all alternate or spiral; stamens outside disc 2
- 1b Leaves opposite at least on flowering twigs or shoots or, if alternate, then stamens set within disc and fewer than petals 5
- 2a Fruit indehiscent, drupaceous; anthers eventually deciduous *Cassine*
- 2b Fruit dehiscent, capsular; anthers usually persistent or, if deciduous, then leaves usually showing latex threads when broken 3
- 3a Capsules with horn- or wing-like emergences, sometimes somewhat fleshy; leaves entire; spines and fasciculate shoots absent *Pterocelastrus*
- 3b Capsules without horn-like emergences 4
- 4a Ovules 3–6 per loculus; shrubs, usually spinescent *Putterlickia*
- 4b Ovules 2 per loculus; leaves spiral or fasciculate and small *Maytenus*
- 5a Fruit dehiscent, capsular 6
- 5b Fruit indehiscent 7
- 6a Capsule elongate, narrow; stamens 5, outside disc *Catha*
- 6b Capsule expanded laterally; stamens (2)3–5, inside disc or disc absent *Hippocratea*
- 7a Fruit a small nut, with persistent, lateral style; stigma peltate *Pleurostyliia*
- 7b Fruit drupaceous 8
- 8a Stamens (2)3(4), inserted within disc; ovary 3-locular *Salacia*
- 8b Stamens 5, inserted outside disc; ovary 2- or 3(4)-locular *Cassine*

Cassine L. (s. Afr.: 12 spp.) 4641000

Robson. 1966. F.Z. 2: 355–418.

Archer. 1990. The taxonomic status of *Cassine* L. s.l. (Celastraceae) in southern Africa. Unpublished M.Sc. thesis, University of Pretoria.

aethiopica Thunb.

(= *Mystroxydon aethiopicum* (Thunb.) Loes.)

Shrub or tree, up to 12 m high. Leaves alternate, pubescent, oblong, 20–120 × 10–70 mm, glossy green on both surfaces. Inflorescence small. Fruit a drupe, becoming bright red. *Flowers yellowish green; August to December*. Evergreen forest, forest margins, riverine bush, open woodland. *De Winter & Killick 8909*.

W S C N E

burkeana (Sond.) Kuntze(= *Mystroxydon burkeanum* Sond.)

Small, bushy tree, up to 6 m high. Leaves alternate, elliptic or oblong-elliptic, 15–30 × 10–20 mm, dark green and sparsely hairy above, pale green and velvety below, venation obscure. Inflorescence small. Fruit a drupe, orange-brown when mature. *Flowers cream-green; September to February*. Dry woodland, rocky outcrops. *Mogg 15084*.

W S C N E

eucleiformis (Eckl. & Zeyh.) Kuntze(= *Gymnosporia amapondensis* Sim,= *Mystroxydon eucleiforme* Eckl. & Zeyh.)

Small tree, up to 10 m high. Leaves alternate, elliptic, 25–40 × 1–25 mm, glossy dark green, elastic threads present when lamina is broken. *Flowers white; January to April*. Margins of montane forest. *Galpin 13348*.

W S C N E

papillosa (Hochst.) Kuntze(= *Elaeodendron capense* Eckl. & Zeyh.)

Tree, up to 10 m high. Bark with yellow pigments. Leaves opposite, oblong to elliptic, 40–120 × 20–50 mm, dark glossy green, venation conspicuous, margin toothed. Inflorescence small. Fruit an ovoid drupe, pale yellow. *Flowers greenish cream; October*. Forest margins. *Van Wyk & Theron 6401*.

W S C N E

peragua L.(= *C. capensis* L.)

Shrub or tree, up to 10 m high. Bark with yellow pigment. Leaves opposite, elliptic, 20–45 × 15–40, venation conspicuous on both surfaces. Inflorescence small. Fruit a berry, brown. *Flowers white; September and May*. Grassland, forest margins. *Jacobsen 3454*.

W S C N E

tetragona (L.f.) Loes.

Scrambling or climbing shrub, up to 4 m high. Branches 4-lined. Leaves opposite, oblong, 20–80 × 1–50 mm, glossy green, margin toothed. Inflorescence small. Fruit a berry, red to purple. *Flowers cream; October to November*. Forest. *Kluge 3318*.

W S C N E

transvaalensis (Burt Davy) Codd(= *Crocoxydon transvaalense* (Burt Davy) N. Robson,= *Pseudocassine transvaalensis* (Burt Davy) Bredell)

Shrub or bushy tree, up to 10 m high. Leaves alternate to fasciculate, narrowly elliptic to oblong, margin entire or toothed. Inflorescence small with characteristic 3-merous flowers. Fruit a drupe, white. *Flowers cream; December to January*. Open woodland. *Galpin 468*.

W S C N E

Catha Forssk. ex Scop. (s. Afr.: 3 spp.) 4629000

Robson. 1966. F.Z. 2: 379–381.

Codd. 1966. Bothalia 9: 124.

Codd. 1971. Bothalia 10: 365.

edulis (Vahl) Forssk. ex Endl.(= *Methyscophyllum glaucum* Eckl. & Zeyh.)

Evergreen tree, up to 25 m high. Leaves opposite, lamina ovate-lanceolate to elliptic, 50–100 × 15–30 mm, venation prominent, margin serrate. Seed with white, wing-like aril. *Flowering July to June*. Sour grassveld, forest margins. *Stalmans 13*.

W S C N E

transvaalensis Codd(= *C. cassinoides* (N. Robson) Codd,= *Lydenburgia cassinoides* N. Robson)

Shrub or small tree, up to 9 m high. Leaves oblong to broadly elliptic, 25–80 × 13–50 mm, greyish green above, paler below, net-veining on undersurface prominent. Inflorescences longer than leaves. *Flowers brownish green; November to January*. Ravines, rocky hillsides, mountainsides. *Raal 597*.

W S C N E

Hippocratea L. (s. Afr.: 9 spp.)

4661000

Robson. 1966. F.Z. 2: 403–417.

africana (Willd.) Loes. var. **richardiana** (Cambess.) N.

Robson

(= *H. nitida* Oberm.)

Liane or scandent shrub, up to 15 m high. Leaves leathery, ovate to oblong, 30–200 × 2–100 mm, glossy green. Inflorescence small with large flowers. Fruit with 3-capsular mericarps, green, glabrous. *Flowers green; October to December*. Dry woodland, dry, evergreen forest. *Strey 3447*.

W S C N E

crenata (Klotzsch) K. Schum. & Loes.(= *H. kirkii* Oliv.)

Scandent shrub, up to 4 m high. Leaves pubescent, elliptic to oblong, 15–65 × 10–28 mm, dark green. Inflorescence dense, small. Mericarps greenish, pubescent. *Flowers green; March to May*. Dry woodland, rocky places. *Brynard & Pienaar 4333*.

W S C N E

indica Willd.(= *H. loeseneriana* Hutch. & Moss)

Liane, scandent shrub or small tree, up to 12 m high. Leaves oblong, 40–150 × 20–100 mm, greyish green, glabrous. Inflorescence lax to dense. Flowers small. Mericarps pale green. *Flowers cream; January to April*. Dry woodland. *Codd 6515*.

W S C N E

longipetiolata Oliv.

Scandent shrub, up to 5 m high. Leaves elliptic to oblong, 30–80 × 12–40 mm, yellowish green, petiole 40–120 mm long. Inflorescence lax. Flowers 5-merous with 3 stamens. Fruit of 3-capsular mericarps united at base, green. *Flowers green; October to January.* Dry woodland. *Gerstner 5794.*

W S C N E

parvifolia Oliv.

(= *Reissantia parvifolia* (Oliv.) Hallé)

Shrub or small tree, often scandent, up to 4.5 m high. Leaves oblong to oblong-elliptic, 27–130 × 11–44 mm, glabrous, deep green. Inflorescence lax, dense. Mericarps brown. *Flowers cream; March to April.* Dry woodland. *Codd 5328.*

W S C N E

Maytenus Molina (s. Afr.: 21 spp.) 4626000

Marais. 1960. *Bothalia* 7: 381–386.

Robson. 1966. *F.Z.* 2: 358–374.

Van Wyk. 1984. *S. Afr. J. Bot.* 3: 115–118.

acuminata (L.f.) Loes. var. **acuminata**

(= *Celastrus acuminatus* L.f.,

= *Gymnosporia acuminata* (L.f.) Szyszyl.)

Shrub or tree, up to 15 m high. Latex threads visible when leaf is broken. Leaves ovate to narrowly lanceolate, apex acuminate and frequently mucronate. *Flowers green to white or white-tinged-red; January to February.* Forest, forest margins. *Codd 8390.*

W S C N E

heterophylla (Eckl. & Zeyh.) N. Robson

(= *Celastrus heterophyllus* Eckl. & Zeyh.,

= *Gymnosporia buxifolia* (L.) Szyszyl.)

Shrub or tree, up to 7 m high, armed. Capsule 2- or 3-(4-)locular, usually yellow. Leaves fasciculate or not, margin acutely irregularly serrulate to entire, base cuneate, usually decurrent on petiole. Twigs often strongly angled or striate. *Flowers white; June to December.* Woodland, scrub and forest margins. *Retief 438.*

W S C N E

mossambicensis (Klotzsch) Blakelock var. **mossambicensis**

(= *Gymnosporia harveyana* Loes.)

Shrub or small tree, up to 8 m high, armed. Mature leaves thin, ovate or ovate-lanceolate, margin often sharply serrate. Inflorescence lax, with long, slender branches. *Flowers white; October to May.* Forest, riverbanks. *Stalmans 215.*

W S C N E

mossambicensis (Klotzsch) Blakelock var. **rubra**

(Harv.) Blakelock

(= *Celastrus ruber* Harv.,

= *Gymnosporia rubra* (Harv.) Loes.)

Shrub, up to 1.5 m high, armed. Leaves ovate to ovate-elliptic, margin serrate or crenate-serrate. Capsule

leathery to almost woody. *Flowers pink to red; January to August.* Forest, riverbanks. *Van der Schijff 6086.*

W S C N E

memorosa (Eckl. & Zeyh.) Marais

(= *Celastrus nemorosus* Eckl. & Zeyh.,

= *Gymnosporia memorosa* (Eckl. & Zeyh.) Szyszyl.)

Shrub or small tree, up to 7 m high, usually armed. Leaf margin revolute; lamina ± elliptic. Capsule 2- or 3-lobed, reddish when mature. *Flowers creamy white; September to March.* Mountain scrub. *Devenish 1737.*

W S C N E

oxycarpa N. Robson

Glabrous armed shrub, up to 1.2 m high. Flowers bisexual. Petals ± 3 mm long. Capsule 17–23 mm long, acute, woody. *Flowers pale green.* Sandveld. *Van der Schijff & Marais 3681.*

W S C N E

peduncularis (Sond.) Loes.

(= *Celastrus peduncularis* Sond.,

= *Gymnosporia peduncularis* (Sond.) Loes.)

Tree, up to 8 m high. Plants, or at least young parts, pubescent. Flowers on conspicuously long peduncles (up to 25 mm). *Flowers greenish yellow; December to May.* Forest and riverine woodland. *Raal 1150.*

W S C N E

polyacantha (Sond.) Marais

(= *Celastrus polyacanthus* Sond.,

= *Gymnosporia polyacantha* Szyszyl.)

Shrub or small tree, up to 4 m high, armed. Leaves fascicled, obovate, 15 × 2–5 mm, veins raised at least on lower surface. Capsule 3-lobed. *Flowers white; February to April.* Mixed woodland. *Liebenberg 8825.*

W S C N E

pubescens N. Robson

Shrub, up to 2.4 m high, pubescent except for petals, stamens and disc. Capsule puberulous, 3(or 4)-locular, ± woody. *Flowers white to cream.* Mopani veld. *Van Rooyen 3120.*

W S C N E

putterlickioides (Loes.) Exell & Mendonça

Shrub or tree, up to 3 m high. Stems, leaves, inflorescence, sepals and capsule pubescent or puberulous. Flowers 6–10 mm in diameter, with broad red disc. Inflorescence relatively stout. *Flowers white; September.* Woodland, thickets, termite mounds. *Khorommbi 944.*

W S C N E

senegalensis (Lam.) Exell

(= *Celastrus senegalensis* Lam.,

= *Gymnosporia senegalensis* (Lam.) Loes.)

Shrub or small tree, up to 9 m high. Leaves usually glaucous, oblanceolate to obovate, margin finely and regularly serrate. Capsule 2-locular, pink to deep red. *Flowers white or greenish white to pale yellow; July to*

September. Woodland, thickets, scrub, wooded grassland, riverbanks. *Onderstall 1138.*

W S C N E

tenuispina (Sond.) Marais

(= *Celastrus tenuispinus* Sond.,
= *Gymnosporia tenuispina* (Sond.) Szyszyl.)

Shrublet, up to 1,5 m high, armed. Leaves lanceolate, oblanceolate to elliptic, 16–70 × 9–17 mm. Capsule yellow, 7–13 mm long, obconic, 3-gonous, truncate, papery. *Flowers pale yellow; October to December.* Woodland, thickets, scrub, sandy or stony soil. *Leistner 3206.*

W S C N E

undata (Thunb.) Blakelock

(= *Celastrus undatus* Thunb.,
= *Gymnosporia albata* (N.E. Br.) Sim)

Shrub or tree, up to 10 m high. Leaves green, greyish green or whitish on lower surface, margin obscurely angled to sharply and spinously dentate or serrate, usually with more than 6 teeth on either side. Capsule greenish or whitish to yellow. *Flowering November to May.* Bushveld, forest, scrub and woodland. *Codd & Dyer 7727.*

W S C N E

Pleurostylia Wight & Arn. (s. Afr.:
1 sp.)

4646000

Davison. 1932. *Bothalia* 2: 342–343.

capensis (Turcz.) Loes.

(= *Cathastrum capense* Turcz.)

Tree, up to 20 m high. Leaves lanceolate, margin wavy. Fruit dry, leathery, internally curved so that conspicuous remains of persistent style lie well down towards base on one side. *Flowers dull white or greenish yellow; October to April.* Woodland, riverbanks. *Codd 8721.*

W S C N E

Pterocelastrus Meisn. (s. Afr.: 3 spp.) 4630000

Davison. 1932. *Bothalia* 2: 321–326.
Robson. 1966. *F.Z.* 2: 374–376.

echinatus N.E. Br.

(= *P. galpinii* Loes.,
= *P. rehmannii* Davison)

Shrub or small tree, up to 5 m high. Leaves elliptic or oblanceolate, 10–20 mm wide, apex obtuse or emarginate. Inflorescence a dense-flowered, short cyme. Horns of fruit short. *Flowers pale yellow; July to May.* Forests, rocky hillsides or streambanks. *Devenish 874.*

W S C N E

rostratus Walp.

Tree, up to 7 m high. Inflorescence a lax, much-branched cyme. Capsule armed with numerous compressed, wing-like, patent or decurrent horns. *Flowers white; October and March.* Mountainsides, evergreen forest. *Story 4009.*

W S C N E

Putterlickia Endl. (s. Afr.: 3 spp.) 4628000

Davison. 1932. *Bothalia* 2: 336–338.
Robson. 1966. *F.Z.* 2: 355–356.
Van Wyk & Mostert. 1987. *S. Afr. J. Bot.* 53: 267–270.

pyracantha (L.) Szyszyl.

(= *Celastrus pyracanthus* L.)

Shrub or small tree, up to 6 m high, armed with prominent spines. Branches smooth. Leaves single or clustered, narrowly obovate, 20–40(–80) × 10–30 mm, dark green, venation more prominent below. Inflorescence long and slender (up to 10 mm). Fruit a 3-lobed, woody capsule, 20 mm long, splitting to release seed enveloped by yellow aril. *Flowers white, October to April.* Mixed bushveld. *Nel 383.*

W S C N E

Salacia L. (s. Afr.: 5 spp.)

4662000

Robson. 1966. *F.Z.* 2: 391–403.

rehmannii Schinz

Shrublet, up to 0,6 m high. Leaves obovate, margin crenate-serrate. Fruit large, ± 50 × 30 mm in diameter, bright orange to red when ripe, skin leathery. *Flowers yellowish green; September to November.* Grassland, rocky situations. *Germishuizen 1397.*

W S C N E

CERATOPHYLLACEAE

Aquatic herbs with elongated, floating, leafy branches; monoecious (male and female flowers on the same plant). Leaves verticillate, 2-fid or dichotomously divided; segments linear or filiform, usually toothed. Perianth herbaceous or submembranous, segments 6–12, irregularly toothed at apex. Stamens 10–20; anthers linear-oblong or oblong, connective produced into a thick, 2- or 3-toothed, coloured appendage or small brown point. Ovary superior, 1-locular. Fruit leathery, indehiscent, smooth or tuberculate.

Ceratophyllum L. (s. Afr.: 2 spp.) 2516000

Wilmot-Dear. 1985. Kew Bull. 40: 243–270.
Wilmot-Dear. 1991. F.Z. 9,6: 124–128.

demersum L. var. demersum forma demersum

Aquatic herb. Leaves branching twice, rarely once or thrice, with spiny teeth on margins. Mature fruit with long apical spine and 2 prominent basal spines. Standing or running water. *Mauve 4269.*

W S C N E

submersum L. subsp. muricatum (Cham.) Wilmot-Dear
var. echinatum (A. Gray) Wilmot-Dear

Aquatic herb. Fruit markedly laterally flattened, marginal rim extended into an entire or irregularly crenate to long-spinose wing, 3,0–4,5 × 2,0–3,0(–3,5) mm, ellipsoid; apical spine (1–)4–9 mm long, 2 basal spines (0,5–)2,0–6,0 mm long; surface usually with few to many small ± elongate, rarely rounded, warty papillae up to 0,2 mm long, sometimes spinulose and up to 0,3 mm long. No specimens in PRE.

W S C N E

CHENOPODIACEAE

Herbs or woody shrubs with well-developed leaves. Leaves alternate or ternate. Flowers bisexual or unisexual, usually regular. Perianth 3–5-lobed or absent from female flowers, segments or lobes sometimes with horizontal wing. Bracts and bracteoles present or absent. Stamens as many as or fewer than perianth lobes. Ovary superior, 1-locular. Fruit usually enclosed in and falling off with a bladder perianth.

Key after Dyer, Gen. 1: 60 (1975).

- 1a Leaves ternate Suaeda
- 1b Leaves alternate, rarely opposite or subopposite 2
- 2a Perianth segments with horizontal wing; flowers bisexual; perianth 3–5-lobed; bibracteolate Salsola
- 2b Perianth segments without wing 3
- 3a Bracts and bracteoles absent 4
- 3b Bracts and bracteoles present in bisexual or female flowers 5
- 4a Fruit a small, succulent berry Einadia
- 4b Fruit a dry nut, enclosed in perianth Chenopodium
- 5a Styles 2 Atriplex
- 5b Styles 4 Lophiocarpus

Atriplex L. (s. Afr.: 19 spp.) 2229000

Aellen. 1940. Bot. Jb. 70: 383–401.
Brenan. 1988. F.Z. 9,1: 144–147.

indurate. *Flowers green; September to February.* Disturbed places. *Repton 1098.*

W S C N E

nummularia Lindl. subsp. nummularia*

Shrub, up to 3 m high. Branches ascending. Leaves rhomboid to orbicular, sinuate-dentate. Bracteoles sessile, rhomboidal to orbicular, papery all over. *Flowers dull yellow; August.* Vleis. Native of Australia. *Zambia 25.*

W S C N E

Chenopodium L. (s. Afr.: 22 spp.) 2223000

Wright. 1912. F.C. 5,1: 435–440.
Brenan. 1964. Fl. Europ. 1: 92–95.
Brenan. 1988. F.Z. 9,1: 136–144.

album L.*

Erect annual herb, up to 1,5 m high. Leaves lanceolate-ovate to subtrilobed; petioles slender, up to 40 mm long. Flowers in dense leafless terminal panicles, overtopping leaves. *Flowers green; July to June.* Disturbed places. Native to Europe and Asia. *Ellery 256.*

W S C N E

semibaccata R. Br. var. typica Aellen

Prostrate herb. Fruit becoming semibaccate when ripe, turning red to orange. Fruiting bracts distinctly rhomboid in outline with deltoid apical lobes. *Flowers yellow; October to January.* Grassland, woodland, beside watercourse. *Codd 8325.*

W S C N E

ambrosioides L.*

Erect herb, up to 1 m high. Leaves lanceolate, up to 100 mm long and 40 mm broad, margins entire, dentate or lacinate, upper surface glabrous, lower surface covered with sessile yellow glands. Inflorescences axillary spikes. *Flowers green; July to June.* Disturbed places. Native of Central America. *Codd 6822.*

W S C N E

suberecta I. Verd.

Decumbent-erect or erect annual or perennial herb, up to 0,75 m high. Leaves rounded at apex. Fruiting bracts with broadly deltoid apical lobes, toothed. Fruit with stipe-like solid base which is the first to swell and

carinatum R. Br.*

Erect annual herb, up to 0,8 m high. Flowers in dense axillary clusters. Leaves ovate, margins sinuate-dentate, surfaces densely pubescent, distinctly petiolate. *Flowers green; January to May*. Margins of cultivated lands or abandoned land. Native to Australia. *Brenan 14912*.

W	S	C	N	E
---	---	---	---	---

cristatum F. Muell.*

Prostrate herb. Flowers in axillary clusters. Leaves ovate to narrowly ovate, margins lobed, distinctly petiolate. Perianth crested. Weed. *Flowers greenish white; January to March*. Disturbed areas. Native to Australia. *Jacobsen 2804*.

W	S	C	N	E
---	---	---	---	---

giganteum D. Don*

(= *C. amaranticolor* Coste & Reyn.)

Erect annual herb, up to 2 m high. Leaves broadly ovate to rhomboid, usually wider than 45 mm, with numerous ± shallow teeth. Flowers in a terminal panicle. *Flowers green; January to March*. Disturbed places. Native to India. *Phillips 3510*.

W	S	C	N	E
---	---	---	---	---

glaucum L.*

(= *C. glaucum* L. subsp. *marlothianum* (Murr) Thell. & Aellen)

Prostrate annual herb with branches up to 400 mm long. Leaves purplish red above with green veins, lower surface conspicuously whitish grey. Flowers in axils of leaves. *Flowers green; July to June*. Edges of dams, vleis and pans. Native to Europe. *Brenan 14295*.

W	S	C	N	E
---	---	---	---	---

hederiforme (Murr) Aellen var. dentatum Aellen*

(= *C. opulifolium* Schrad. ex Koch & Ziz subsp. *hederiforme* Murr)

Herb, up to 2,5 m high, densely clothed with mealy vesicular hairs. Foliage very broadly cuneate or even concave-subtruncate at base. Seeds subelliptical, 1,0–1,2 × 0,9 mm. *Flowers grey*. Vleis, sandy soil. Native to Europe and Asia. *Du Plessis 946*.

W	S	C	N	E
---	---	---	---	---

mucronatum Thunb.

(= *C. vulvaria* L.)

Erect herb, up to 1,5 m high. Leaves triangular, hastate with rounded angles, mucronate, glabrous; petiole as long as blade. Flowers in terminal panicles. *Flowers green; November*. Disturbed places. *Liebenberg 8542*.

W	S	C	N	E
---	---	---	---	---

multifidum L.*

Prostrate to procumbent branched herb with stems up to 0,6 m long. Leaves sessile, deeply pinnately divided with irregular, sometimes dentate lobes. Flowers sessile, fascicled in axils of leaves, numerous. *Flowers green; November to May*. Disturbed places. Native to South America. *Retief 1763*.

W	S	C	N	E
---	---	---	---	---

murale L.

(= *C. longidjawense* A.Peter,
= *C. murale* L. var. *acutidentatum* Aellen)

Erect, branched annual herb, up to 0,9 m high. Leaves ovate-rhomboid with slender petioles up to 30 mm, margin irregularly dentate. Flowers arranged in dense axillary panicles shorter than leaves. *Flowers green; July to June*. Old lands, waste places, gardens. Cosmopolitan. *Leendertz 624*.

W	S	C	N	E
---	---	---	---	---

opulifolium Schrad. ex Koch & Ziz

Erect herb, up to 1 m high. Leaves rhombic-ovate, almost as wide as long, usually with prominent lobe on each side, toothed, farinose. Flowers in grey-farinose panicles. *Flowers green; February*. Disturbed places. *Brenan 14956*.

W	S	C	N	E
---	---	---	---	---

petiolariforme (Aellen) Aellen*

(= *C. opulifolium* Schrad. ex Koch & Ziz subsp. *petiolariforme* Aellen)

Erect herb. Leaves deeply lobed; petioles up to 20 mm long. *Flowers yellow; March*. Grassland. Native to Europe and Asia. *Burt Davy 7215*.

W	S	C	N	E
---	---	---	---	---

phillipsianum Aellen

Erect annual herb, up to 2 m high. Leaves narrowly ovate, hastate, upper part with teeth, farinose. Flowers in terminal panicles. *Flowers green; October to April*. Disturbed places. *Leendertz 4074*.

W	S	C	N	E
---	---	---	---	---

pumilio R. Br.*

Prostrate to suberect herb with branches up to 500 mm long. Leaves narrowly ovate, up to 14 × 6 mm. Flowers in axillary clusters. *Flowers green; February to June*. Disturbed places. Native to Europe and Asia. *Pole-Evans 4789(13)*.

W	S	C	N	E
---	---	---	---	---

schraderianum Roem. & Schult.*

(= *C. foetidum* Schrad.)

Erect annual herb, up to 400 mm tall. Leaves oblong, pinnately divided, sessile yellow glands present. Flowers very small, in much-branched axillary, compound cymes arranged in large terminal panicles. *Flowers green; November to June*. Disturbed and waste places. Region of origin uncertain. *Devenish 1436*.

W	S	C	N	E
---	---	---	---	---

Einadia Raf. (s. Afr.: 1 sp.)

2261010

Wilson. 1984. Fl. Austr. 4: 161.

nutans (R. Br.) A.J. Scott subsp. nutans*

(= *Rhagodia nutans* R. Br.)

Herb with stems trailing up to 0,6 m. Leaves narrowly ovate to linear. *Perianth segments yellowish*, de-

pressed-globular, mealy to glabrescent. *Flowering April*. Grassland. Native to Australia. *Van Wyk 335*.

W S C N E

Lophiocarpus Turcz. (s. Afr.: 3 spp.) 2287000

Schreiber. 1967. F.S.W.A. 24: 2.

Nowicke. 1968. Ann. Mo. bot. Gdn 55: 353–355.

polystachyus Turcz.

(= *L. burchellii* Hook. f.,

= *Microtea burchellii* (Hook. f.) N.E. Br.)

Annual herb, up to 400 mm tall. Leaves filiform to linear. Achenes ribbed, sometimes muricate between ridges, ± 1.5 mm in diameter. *Perianth yellowish green*. *Flowering January to March*. Grassland, sandy soil. *Raal & Raal 741*.

W S C N E

tenuissimus Hook. f.

(= *Microtea tenuissima* (Hook. f.) N.E. Br.)

Annual herb, up to 300 mm tall. Leaves filiform. Achenes muricate to warty, ± 1.2 mm in diameter. *Perianth yellow*. *Flowering January to April*. Grassland, sandy soil. *Retief & Herman 155*.

W S C N E

Salsola L. (s. Afr.: 70 spp.)

2269000

Botsch. 1974. Kew Bull. 29: 597–614.

Wilson 1984. Fl. Austr. 4: 314–316.

aphylla L.f.

(= *Caroxylon salsola* Thunb.,

= *S. caffra* Sparrm.)

Shrub, up to 1.5 m high. Cauline leaves and leaves in bud pubescent (later almost glabrous), irregularly rugose when dry. Margins of salt pans. *Burger 600*.

W S C N E

glabrescens Burt Davy

Glabrous shrub, rarely pubescent, up to 1.5 m high. Subfloral leaves of lowest flowers slightly longer than bracts. *Perianth* ± 1.2 mm wide excluding wings. *Flowering March to April*. Grassland. *Morris 1320*.

W S C N E

humifusa A. Brückn.

Procumbent shrublet forming mats 150–400 mm in diameter. Long lateral branches rooting at intervals along their length. Leaves greyish green, small, ± 1.5 mm long. Dry margins of pans and vleis. *Zambatis 57*.

W S C N E

kali L.

(= *S. australis* R. Br.,

= *S. ruthenica* (Iljin) Soó)

Herbaceous, annual shrublet, up to 300 mm tall. Leaves linear-subulate, decurrent, semiterete. Tepals cartilaginous with scarious wings 2–5 mm wide. *Flowers white*; *January*. Grassland, disturbed places. *Retief 1867*.

W S C N E

rabieana I. Verd.

(= *S. aphylla* L.f. var. *virescens* Fenzl ex Drège)

Pubescent shrub, rarely glabrous, up to 1.2 m high. Subfloral leaves of lowest flowers equalling bracts. *Perianth* ± 2 mm wide excluding bracts. *Flowers creamy white*; *March*. Grassland. *Pole-Evans 3132*.

W S C N E

Suaeda Forssk. (s. Afr.: 6 spp.)

2261000

Aellen. 1967. F.S.W.A. 32: 20.

fruticosa (L.) Forssk.

Woody dwarf shrub, up to 500 mm tall. Leaves succulent, 2–4 mm long. Flowers solitary in axils of leaves with white bracts at base. *Perianth green*. *Flowering November to January*. Margins of pans. *Obermeyer et al. 38*.

W S C N E

CHRYSOBALANACEAE

Trees or occasionally rhizomatous shrublets. Leaves alternate, usually with 2 glands at base of blade or near end of petiole. Flowers regular or slightly irregular. Petals 5, free, arising from rim of bell-shaped receptacle tube. Ovary superior, hairy, often in upper half of receptacle tube below mouth. Fruit a drupe.

Parinari Aubl. (s. Afr.: 2 spp.)

3405000

White. 1976. Bull. Jard. bot. nat. Belg. 46: 265–350.

capensis Harv. subsp. capensis

(= *P. capensis* Harv. subsp. *latifolia* (Oliv.) R.A. Graham,

= *P. curatellifolia* Planch. ex Benth. var. *fruticulosa* R.E. Fr.)

Rhizomatous suffrutex, usually lower than 0.3 m, rarely up to 2 m high. Leaf lamina discolorous, elliptic

to narrowly elliptic, apex acute, bracts broadly ovate. *Flowers white*; *August to January*. Grassland, often between rocks of hillsides. *Gerstner 5540*.

W S C N E

curatellifolia Planch. ex Benth.

(= *P. curatellifolia* Planch. ex Benth. subsp. *mobola* (Oliv.) R.A. Graham,
= *P. mobola* Oliv.)

Tree, up to 12 m high. Leaf lamina discolorous, elliptic, apex rounded. Flowers 4–6 mm in diameter, in compact

heads. Fruit oval to round, up to 50 × 35 mm, russet-yellow, greyish scaly and pitted. *Flowers light purple to cream; September to December.* Open wooded grassland. *Zambatis* 766.

W S C N E

CLUSIACEAE

Trees, shrubs or herbs. Leaves opposite or in whorls of 3, simple, exstipulate, leathery or if herbaceous then mostly pellucid-dotted. Flowers bisexual or unisexual, regular. Sepals 2–6. Petals 2–6. Stamens usually indefinite, free, connate or connate in bundles. Ovary superior, 1–many-locular. Fruit a capsule or a berry.

Key after Killick & Robson in F.S.A. 22: 14 (1976).

Flowers bisexual; sepals 5; styles (2)3–5, elongate; ovules several–many per loculus **Hypericum**
Flowers polygamous, rarely bisexual; sepals 4; styles absent and stigmas sessile; ovules 1 per loculus **Garcinia**

Garcinia L. (s. Afr.: 2 spp.)

5199000

Killick & Robson. 1976. F.S.A. 22: 20–23.

gerrardii Harv. ex Sim

(= *G. transvaalensis* Burt Davy)

Shrub or tree, up to 13 m high. Leaves opposite; petioles 8–18 mm long. Flowers terminal at ends of branches; staminal or staminodial fascicles present. *Flowers white; December.* A constituent of forest, sometimes on streambanks. *Scheepers* 1238.

W S C N E

livingstonei T. Anderson

(= *G. angolensis* Vesque)

Shrub or tree, up to 12 m high. Leaves 3-whorled; petioles 4–8 mm long. Flowers in fascicles in axils of older leaves on old wood; staminal or staminodial fascicles absent. *Flowers greenish white to cream or pale yellow with orange or reddish longitudinal glandular lines; August to November.* Scrub, open woodland and forest, often riverine. *Netshiungani* 958.

W S C N E

Hypericum L. (s. Afr.: 9 spp.)

5168000

Killick & Robson. 1976. F.S.A. 22: 14–20.

aethiopicum Thunb. subsp. **sonderi** (Bredell) N. Robson

(= *H. sonderi* Bredell)

Perennial herb, 100–300 mm tall. Stems terete, glandular. Sepals and bract without marginal stalked glands. Sepals acute, subequal. Styles 3, free. *Flowers primrose-yellow, usually red-tinged; July to June.* Grassland. *Morris* 20.

W S C N E

lalandii Choisy

Herb, 40–400 mm tall. Stems quadrangular. Sepals and petals without dark dots. Styles 3, free. *Flowers yellow or orange, sometimes marked with red; July to June.* In or near water; swampy areas, vleis, river or streambanks. *Codd & Dyer* 8992.

W S C N E

revolutum Vahl

(= *H. lanceolatum* Lam.,
= *H. leucoptychodes* Steud. ex A. Rich.)

Shrub, up to 3 m high. Leaves 8–23 mm long. Styles 5, partially or wholly united. Flowers solitary at ends of branches. *Flowers yellow; July to June.* Streambanks and edge of forests. *Kluge* 30.

W S C N E

roeperianum G.W. Schimp. ex A. Rich. var. **roeperianum**

Small tree or shrub, up to 5 m high. Leaves 40–85 mm long with densely reticulate venation. Styles 5, united to apex. Flowers in few- to many-flowered terminal corymbose cymes. *Flowers bright yellow, with few or no submarginal gland dots; July to November and in April.* Streambanks, in woodland or at edge of forest. *Van der Schijff* 5529.

W S C N E

wilmsii R. Keller

Perennial herb, 60–200 mm tall. Stems terete, procumbent. Leaves shortly petiolate. Sepals obtuse to rounded, unequal, yellow gland-dotted and with 0–few dark dots along margin. Styles 3–5, free. *Flowers yellow or orange, dark gland-dotted along margin.* Moist areas and on mountainsides. *Fourie* 854.

W S C N E

COMBRETACEAE

Trees, shrubs or climbers. Leaves opposite or alternate, without stipules. Flowers small, regular, stalkless, with cup-shaped receptacle tube, usually clustered in dense heads or spikes. Petals 4 or 5, insignificant and arising from receptacle tube. Stamens 8–10, protruding; filaments bent inward in bud. Ovary inferior (easily mistaken for flower stalk); style simple. Fruits winged.

Key after Dyer, Gen. 1: 402 (1975).

- 1a Petals absent; calyx produced into a short, constricted tube above ovary; fruit 2–5-winged *Terminalia*
- 1b Petals present 2
- 2a Calyx produced into a long tube above ovary *Quisqualis*
- 2b Calyx produced into a short, campanulate or cup-shaped limb above ovary 3
- 3a Flowers bisexual; fruit 4- or 5-winged or -angled *Combretum*
- 3b Flowers male and bisexual; fruit 2(3 or 4)-winged *Pteleopsis*

Combretum *Loefl.* (s. Afr.: 31 spp.) 5538000

Brandis ex Engler. 1898. *Natürl. PflFam.* 3,7: 125.
Schinz. 1901. *Bull. Herb. Boissier*, Ser. 2,1: 878.
Duemmer. 1913. *Gdnrs' Chron.*, Ser. 3,53: 181.
Exell. 1968. *Bolm Soc. broteriana* 42: 19–22.
Exell. 1978. *F.Z.* 4: 100–160.
Van Wyk. 1984. *S. Afr. J. Bot.* 3: 125–134.
Retief. 1986. *Bothalia* 16: 44–45.

apiculatum *Sond.* subsp. **apiculatum**

Tree, 4–6(–10) m high. Bark of young branchlets coming off in untidy irregular fibrous strips or threads. Leaves glabrous. Flowers 4-merous; petals ciliate; stamens 8. Fruit up to 30 mm long. *Flowers yellow; August to January.* Dry savanna and savanna woodland. *Zambatis* 709 (flowers), *Dyer & Verdoorn* 4255 (fruit).

W S C N E

celastroides *Welw. ex G. Lawson* subsp. **orientale** *Exell*

Shrub or climber, 2,0–2,5 m high. Inflorescence elongated. Flowers 4-merous. Petals glabrous. Stamens 8. Fruit up to 20 mm long. *Flowers yellow, cream or whitish; December to April.* Forest patches, deciduous woodland and shrub savanna. *Codd* 5318.

W S C N E

collinum *Fresen.* subsp. **gazense** (*Swynn. & Baker f.*) *Okafor* (= *C. gazense* *Swynn. & Baker f.*)

Small semideciduous tree or shrub, 2–3(–15) m high. Leaves distinctly hairy beneath, at least on midrib; prominent reticulation beneath. Fruit longer than 36 mm, without hairs but densely covered with conspicuous red scales. *Flowers white or yellowish green; August to October.* Tree or shrub savanna. *Codd* 3017 (flowers) & 5348 (fruit).

W S C N E

collinum *Fresen.* subsp. **suluense** (*Engl. & Diels*) *Okafor* (= *C. suluense* *Engl. & Diels*)

Small semideciduous tree or shrub, 2–3(–15) m high. Leaves glabrous beneath. Fruit 38–50 mm long, densely hairy, red scales conspicuous. *Flowers white or yellowish green; June to October.* Tree or shrub savanna. *Van der Schijff* 3911 (flowers) & 97 (fruit).

W S C N E

collinum *Fresen.* subsp. **taborense** (*Engl.*) *Okafor* (= *C. taborense* *Engl.*)

Small semideciduous tree or shrub, 2–3(–15) m high. Leaves acute to acuminate, glabrous and silvery beneath with darker venation. Fruit longer than 38 mm, glabrous, red scales conspicuous. *Flowers white to yellowish green.* Tree or shrub savanna. *Obermeyer* 36098.

W S C N E

edwardsii *Exell*

Straggly tree or robust climber, up to 8 m high. Leaves 73 × 36 mm, glabrous when mature, base rounded to subcordate. Fruit 22 mm long. *Flowers yellow.* Evergreen forest, forest margins and ravines. *Kluge* 1886.

W S C N E

erythrophyllum (*Burch.*) *Sond.* (= *C. glomeruliflorum* *Sond.*)

Tree, 10(–19) m high. Leaves pubescent to tomentose beneath, at least on midrib and secondary veins. Fruit 15 mm long. *Flowers pubescent to tomentose, cream or yellow; September to February.* Along banks of watercourses or near water. *Smith* 797 (flowers), *Verdoorn* 700 (fruit).

W S C N E

hereroense *Schinz* (= *C. transvaalense* *Schinz*)

Small tree or shrub, up to 9 m high. Fruit 20 mm long, russet-coloured. *Flowers yellow; August to January.* Tree or shrub savanna. *Fourie* 2838 (flowers), *De Winter* 7551 (fruit).

W S C N E

imberbe *Wawra*

Tree, up to 15 m high. Branchlets spiny. Bark rectangularly reticulate. Leaves densely lepidote. Fruit 15 mm, silvery-lepidote. *Flowers yellowish; November to March.* Tree savanna. *Oates* 141 (flowers), *Van Vuuren* 1671 (fruit).

W S C N E

kraussii Hochst.(= *C. nelsonii* Dummer)

Tree, 15 m high. Leaves glabrous beneath when mature, with reticulate venation on lower surface. Fruit 20 mm long, reddish. *Flowers in elongated, lax spikes, white; September to December.* In or near forests. *Killick & Strey 2499* (flowers), *De Winter 7752* (fruit).

W S C N E

microphyllum Klotzsch(= *C. paniculatum* Vent. subsp. *microphyllum* (Klotzsch) Wickens)

Liane or scandent shrub, 2–3 m high. Stems armed with slightly recurved spines. Leaves usually subcircular, usually tomentose at least when young. Fruit 20 mm long. *Flowers red; July to November.* Savanna and woodland, thickets along watercourses. *Van der Schijff 61* (flowers), *Van Warmelo 51z19/27* (fruit).

W S C N E

moggii Exell

Small tree or shrub, up to 5 m high. Fruit puberulous, 22 mm long. Leaves discolorous, underside puberulous. *Flowers yellow; October to November.* Hill tops and mountain tops, north-facing; sandy soil in crevices between rocks. *Codd 10346* (flowers), *Mogg 17300* (fruit).

W S C N E

molle R. Br. ex G. Don(= *C. gueinzii* Sond.,
= *C. holosericeum* Sond.)

Semideciduous tree or shrub, up to 10 m high. Bark of young branchlets coming off in untidy irregular fibrous strips or threads. Leaves densely grey-tomentose. Fruit 20 mm long. *Flowers yellow or greenish yellow; August to November and in February.* Savanna. *Hemm 111a* (flowers), *Mogg 17299* (fruit).

W S C N E

mossambicense (Klotzsch) Engl.(= *C. cataractarum* Diels)

Small deciduous tree, shrub or woody climber, up to 4 m high. Stems armed with curved spines. Fruits 20–30 mm long, pubescent. *Flowers 5-merous; white or pinkish; September to January.* Tree or shrub savanna. *Pole-Evans 4507.*

W S C N E

nelsonii Dummer

Shrub, rarely a tree, 2–4 m high. Leaves elliptic, obovate-elliptic or obovate, glabrous beneath when mature, except for scales, often with hair-tuft domatia. Flowers in rather congested subcapitate spikes, upper receptacle visibly divided into a lower ± campanulate part containing disc and an expanded ± cupuliform upper part. Savanna on rocky terrain. *Coetzee 1195.*

W S C N E

padoides Engl. & Diels(= *C. tenuipes* Engl. & Diels)

Small tree or shrub, up to 5 m high. Leaves narrowly elliptic to elliptic, abruptly acuminate at apex and cuneate to rounded at base. Fruit up to 13 mm long. *Flowers yellow or white; December.* Deciduous tree/shrub savanna; dry rocky riverbanks. *Thornicroft 22210* (flowers), *Galpin 885* (fruit).

W S C N E

petrophilum Retief

Small slender tree or shrub, up to 4 m high. Leaf lamina ovate to elliptic, discolorous, main and secondary veins not raised. Fruit 14 mm long. *Flowers yellow; September to November.* Between rocks in fissures or along edges on northwestern or southern slopes in sourish mixed bushveld. *Strey 3454* (flowers), *Van Jaarsveld 1086* (fruit).

W S C N E

vendae A.E. van Wyk

Small slender tree or shrub, 1,5–3,0(–5,0) m high. Leaves distinctly hairy below when mature, reticulation on undersurface of lamina conspicuously raised. *Flowers light yellow or cream; October.* Savanna, rocky terrain with sandy soils. *Van Wyk & Theron 4923* (flowers), *Van Wyk 5641* (fruit).

W S C N E

woodii Dummer

Tree, shrub or climber, up to 8 m high. Leaves glabrous beneath when mature, both secondary and intersecondary veins raised on lower surface. Fruit 20 mm long. *Flowers in elongated lax spikes; whitish.* Savanna, occasionally forest. *Codd 6031.*

W S C N E

zeyheri Sond.

Small to medium-sized deciduous tree, up to 10 m high. Fruit up to 60 mm long. *Petals obovate-spathulate to spathulate, yellow; August to December.* Savanna to woodland. *Hanekom 1890.*

W S C N E

Pteleopsis Engl. (s. Afr.: 2 spp.)

5539000

Exell. 1978. F.Z. 4: 162–166.

myrtifolia (G. Lawson) Engl. & Diels

Deciduous tree, up to 20 m high. Leaves usually shiny above, acuminate; petiole up to 10 mm long. Fruit 2- or 3-(4-, rarely 5-)winged, rarely with an apical peg. *Flowers white or yellow; December to March.* Evergreen or riverine forest, savanna or woodland. *Acocks 16764* (flowers), *De Winter & Killick 8894* (fruit).

W S C N E

Quisqualis L. (s. Afr.: 1 sp.)

5541000

Sonder. 1894. F.C. 2: 512–513.

Carr. 1986. Flower. Pl. Afr. 49: t. 1925.

parviflora *Gerrard ex Sond.*

Vigorous liane or bushy shrub, 2–3 m high. Twigs, petioles and young leaves hispid with patent, rusty pubescence. Leaves opposite or ternate. Fruit 5-winged, glandular. *Flowers lime-green*. Rocky wooded slopes, banks of watercourses, forest margins and evergreen forest. *Van der Schijff 6043*.

W S C N E

Terminalia L. (s. Afr.: 7 spp.)

5544000

Exell. 1978. F.Z. 4: 168–180.

brachystemma *Welw. ex Hiern*

Small deciduous or semideciduous tree or shrub, 5–8 m high. Bark on young branchlets purple-black, peeling off in cylindric or hemicylindric flakes exposing reddish brown or brown surface. Leaves sessile or subsessile, glabrous or pubescent or sparsely appressed-pilose. *Flowers white; October to December*. Woodland or savanna. *Westfall 1596* (flowers), *Venter 4231* (fruit).

W S C N E

phanerophlebia *Engl. & Diels*

Small tree or shrub, up to 7 m high. Bark on young branchlets not peeling off; branchlets appressed-pubescent. Leaves obovate to obovate-elliptic, base cuneate, apex acuminate, tertiary nerves and veins impressed above, raised below. Fruit 28–40 mm long. *Flowers white; November to February*. Gallery forest; woodland or shrub savanna. *Codd 5235*.

W S C N E

prunioides *G. Lawson*

Small deciduous tree or shrub, 7–15 m high. Spines occasionally present but only on long shoots; long shoots usually straight. Leaves in fascicles on short spur shoots, lateral nerves impressed above. Fruit 40–65 mm long. *Flowers cream or white; September to May*. Woodland or savanna. *Theron 2721*.

W S C N E

sericea *Burch. ex DC.*

Small deciduous bushy tree or shrub, 3–12(–16) m high. Bark on young branchlets purple-black, peeling off in cylindric or hemicylindric flakes exposing reddish brown or brown surface. Leaves densely silvery sericeous-tomentose, 3 times as long as broad, lateral nerves inconspicuous. *Flowers greenish white; October to February*. Woodland or savanna on sandy soils. *Germishuizen 981* (flowers), *Codd 5182* (fruit).

W S C N E

CONNARACEAE

Trees or shrubs, sometimes scandent. Leaves imparipinnate; leaflets many-jugate. Flowers small, tomentose, usually in racemes. Calyx 5-partite, lobes subequal. Petals 5, free. Stamens 5 or 10, free at base; anthers usually recurved with age. Gynoecium of (1–3)5 free hirsute carpels. Fruit of 1 or 2 follicles, velvety pubescent, usually curved.

Cnestis Juss. (s. Afr.: 1 sp.)

3428000

Mendes. 1966. F.Z. 2: 615–616.

Lemmens. 1989. Agricultural Wageningen Papers 89-6: 220.

polyphylla *Lam.*

(= *C. natalensis* (Hochst.) Planch. & Sond.,

= *Zanthoxylum natalense* Hochst. ex O. Krauss)

A woody climber, scandent shrub or small tree. Branches trailing. Leaves compound. Leaf rachis and

inflorescence with dense cinnamon indumentum. Follicles covered with reddish brown hairs. *Flowers pale green; October*. Forest, woodland. *Van der Schijff 5058*.

W S C N E

CONVOLVULACEAE

Herbs or undershrubs, trailing or twining; sometimes parasitic. Leaves alternate, often lobed or ± heart-shaped or much reduced, scale-like; without stipules. Flowers regular, often subtended by 2 or more bracts. Petals 5, united, with distinct midpetaline zones (plaits), twisted in bud; corolla funnel-shaped. Stamens 5, inserted towards base of corolla tube. Ovary superior, 1–4-locular, with 1–4 ovules in each loculus.

Key after Dyer, Gen. 1: 500–501 (1975).

- 1a Leaves minute, scale-like or absent; yellowish, twining parasites; flowers small, usually in clusters, often numerous **Cuscuta**
 1b Leaves well developed, green 2
 2a Ovary 2- or 4-lobed or -cleft; styles 2, inserted between lobes of ovary; prostrate herbs 3
 2b Ovary not deeply lobed; style simple or if 2, then terminal; plants of various habit 4
 3a Ovary 2-cleft, with 2 ovules in each loculus **Dichondra**
 3b Ovary 4-cleft, with 1 ovule in each loculus **Falkia**
 4a Styles 2, free or $\pm$ united at base 5
 4b Style 1, stigmas globose to linear 6
 5a Styles forked; stigmas 4, linear or subclavate **Evolvulus**
 5b Styles simple; stigmas 2, peltate or capitate **Seddera**
 6a Pollen smooth or with folds or ridges 7
 6b Pollen spinose 10
 7a Stigmas filiform, terete or subclavate **Convolvulus**
 7b Stigmas globose, ovate, oblong or elliptic 8
 8a Ovary 1-locular; stigmas ovate, complanate above; corolla white or cream with purple 'eye' **Hewittia**
 8b Ovary 2(4)-locular 9
 9a Flowers in pedunculate, subglobose heads, usually blue; leaves entire or slightly lobed, cordate **Jacquemontia**
 9b Flowers in cymes, dichasia, or solitary, white or yellow, often with dark centre; leaves usually lobed or dissected; fruit a 4-valved capsule, or shedding 4-valved pericarp as a whole by basal circumscission **Merremia**
 10a Fruit dehiscent, almost invariably splitting into 4 valves **Ipomoea**
 10b Fruit indehiscent, pericarp woody or leathery **Turbina**

Convolvulus L. (s. Afr.: 13 spp.) 6993000Mecuse. 1958. *Bothalia* 6: 666–696.Gonçalves. 1987. *F.Z.* 8,1: 26–30.**arvensis L.***

Prostrate or twining perennial herb. Leaves ovate-oblong or oblong, with hastate or sagittate base. Flowers solitary or sometimes in 2- or 3-flowered cymes. Corolla $\pm$ 20 mm long. *Flowers white or pink; October.* Weed in cultivated soils. Native to Europe and Asia. *Theron 1141.*

W S C N E

boecklerianus Peter

Prostrate or twining perennial herb. Leaves pinnately lobed with central lobe largest. Flowers solitary, sessile or with very short peduncles. Corolla 7–10 mm long. Sepals laxly covered with silky, shiny, golden brown hairs. *Flowers white, pale pink or pale pinkish mauve; October and March.* Grassland. Louw 1976.

W S C N E

dregeanus Choisy(= *C. liniformis* Rendle)

Trailing or suberect perennial herb. All vegetative parts and flowers glabrous. Leaves variable, from linear, entire or with basal auricles to palmatisect. Flowers solitary, distinctly pedunculate, peduncles 5–30(–45) mm long. Corolla 12–20 mm long. *Flowers pinkish white or white; November to March.* Grassland. Acocks 20833.

W S C N E

farinosus L.(= *C. cordifolius* Thunb.,
= *C. penicellatus* A. Rich.)

Twining or prostrate perennial herb. Stems pubescent or farinose-puberulous. Leaf lamina triangular-ovate,

rarely lanceolate; subsagittate or cordate at base; subentire to irregularly and shallowly crenate. Inflorescence subumbellate, 1–6-flowered; peduncle up to 60 mm long. Corolla 10–15 mm long. *Flowers white, very pale pink or pinkish purple; July to June.* Upland grasslands. Codd 8748.

W S C N E

multifidus Thunb.(= *C. thunbergii* Hallier f.)

Suberect to prostrate perennial herb, finely, densely and very shortly white or silvery, rarely fawnish, tomentose. Leaves up to 25 mm long with 5–9 narrow, linear or filiform, obtuse, palmately arranged lobes. Flowers solitary, peduncles up to 20 mm long. Corolla 10–12 mm long. *Flowers pale pink or white; November to March.* Grassland. Zambatis 641.

W S C N E

natalensis Bernh. apud O. Krauss var. natalensis(= *C. calycinus* E. Mey. ex Choisy,= *C. natalensis* Bernh. apud O. Krauss var. *integrifolia* C.H. Wright) *

Prostrate or twining perennial herb. All parts covered with short stiff hairs, sometimes silky or woolly, fawn, rusty-brown to silvery white. Leaves cordate-ovate, cordate-oblong or sometimes cordate or narrowly reniform, crenate. Corolla 20–35 mm long. Peduncles 1–few-flowered. *Flowers white, cream-coloured or white tinged with green; November to January.* Rocky areas in grassland. Codd 8056.

W S C N E

natalensis Bernh. apud O. Krauss var. transvaalensis

(Schltr.) A. Meeuse

(= *C. transvaalensis* Schltr.,= *C. bullerianus* Rendle)

Prostrate or twining perennial herb. Hairs as in var. *natalensis*. Leaves linear with hastate base to oblong,

or long-triangular with cordate to sagittate or hastate, sometimes truncate or rounded base, entire or pinnatifid. Corolla 20–35 mm long. Peduncles 1–few-flowered. *Flowers white, cream-coloured or white tinged with green; September to December.* Grassland on mountainsides. *Codd 8131.*

W S C N E

ocellatus Hook. f. var. **ocellatus**

(= *C. randii* Rendle)

Erect to decumbent perennial herb, up to ± 0,6 m high, covered with brownish or greyish tomentum. Leaves without auricles, linear to linear-oblong, subtruncate or cuneate. Corolla ± 12 mm long. Peduncles up to 5 mm long, 1(2)-flowered. *Flowers white or pink, with dark reddish purple centre; November to December.* In woods and on red sandy soil. *Read s.n., sub PRE 654730.*

W S C N E

ocellatus Hook. f. var. **ornatus** (Engl.) A. Meeuse

(= *C. ornatus* Engl.)

Erect to decumbent perennial herb, up to 0,6 m high. Corolla, peduncle and tomentum as in var. *ocellatus*. Leaves palmately 5-fid or linear to linear-oblong, emarginate or subsagittate with basal auricles. *Flowers white or pink with dark reddish purple centre; November to March.* Grassland. *Van Wyk 1387.*

W S C N E

sagittatus Thunb.

Prostrate or twining perennial herb. Leaf lamina oblong, triangular-ovate to linear, sagittate at base. Inflorescence 1–3(–several)-flowered; peduncle up to 45 mm long. Corolla 8–15 mm long. *Flowers white or sometimes with pink or purple-red centre or pink with purple centre; September to March.* Open woodland, grassland, growing in pans and roadside. *Coetsee 328.* (It is impracticable to uphold the various subspecies and varieties; it would be better to consider this as a very variable taxon—W.G. Welman, pers. comm.).

W S C N E

thunbergii Roem. & Schult.

(= *C. altheoides* Thunb. p.p.,

= *C. capensis* Burm. f. var. *plicatus* Baker)

Prostrate perennial herb, covered with rusty brown to fawn, rarely silvery white, short stiff hairs. Leaves pinnately lobed, linear to linear-oblong with hastate and toothed to dissected base; margin of central lobe often sinuous, or ± irregularly pinnatifid to deeply pinnatisect. Corolla 18–25 mm long. Peduncles 10–40 mm long, 1(2)-flowered. *Flowers white or pale pink; August to March.* Grassland. *Comins 861.*

W S C N E

Cuscuta L. (s. Afr.: 15 spp.)

6968000

Meeuse. 1958. *Bothalia* 6: 644–657.

Verdcourt. 1963. *F.T.E.A.*: 3–12.

Gonçalves. 1987. *F.Z.* 8,1: 130–135.

appendiculata Engelm.

Twining parasite. Calyx shorter than corolla tube, usually very loose about base of corolla to almost spreading, with wart-like or saccate processes at base. Scales in corolla tube free, not bifid at apex. Styles 2, free to base; stigmas globose. *Flowers white/cream; November.* On *Lycium*, *Nicotiana glauca*, *Hermannia*, *Combretum*, *Pelargonium*, *Falckia*, *Asteraceae*, *Campulaceae*, *Sporobolus* and *Thesium*. *Schlechter 3811.*

W S C N E

australis R. Br.

(= *C. cordofana* (Engelm.) Yunc.,

= *C. obtusiflora* Humb., Bonpl. & Kunth var. *australis* (R. Br.)

Engelm.)

Twining parasite. Scales in corolla tube bifid at apex or entire. Corolla lobes obtuse, usually shorter than tube. Styles 2, free to base; stigmas globose. Flowers 5-merous, subsessile, in globose clusters. *Flowers cream or yellow; November.* On swamp vegetation, e.g. *Polygonum* spp. *Galpin 11622.*

W S C N E

campestris Yunc.*

Twining parasite. Scales in corolla tube free, not bifid at apex. Corolla lobes broadly triangular, acute, often with inflexed tips. Styles 2; free to base; stigmas globose. Inflorescence a compact spherical cluster. *Flowers greenish yellow; July to June.* On swamp vegetation and great variety of other plants. Native to North America. *Codd 9225.*

W S C N E

cassytoides Nees ex Engelm.

(= *C. timorensis* Decne. ex Engelm.)

Twining parasite. Styles united almost to apex. *Flowers yellowish; January and April.* Parasitic on many woody plants, e.g. *Grewia*, *Trema*, *Ficus*, in forests and thickets. *Wager 23014.*

W S C N E

epithymum Murray*

(= *C. trifolii* Bab.)

Twining parasite. Styles 2, free to base; stigmas filiform, as long as or longer than style. Flowers herbaceous, ± 3 mm long, sessile, in dense, compact, globose clusters. *Flowers reddish; January and May to June.* On a variety of plants, often on leguminous hosts. Native to Europe and Asia. *Smith 6218.*

W S C N E

hyalina Roth

(= *C. epitribulum* Schinz)

Twining parasite. No fringed scales in corolla tube. Styles 2, free to base; stigmas globose. *Flowers yellowish; January.* Parasitic on various hosts in rather dry country. *Pole-Evans 4538.*

W S C N E

kilimanjari *Oliv.* var. **kilimanjari**

Twining parasite. Flowers 4–7 mm long; calyx and corolla lobes broad, obtuse or rounded. Styles 2, free to base; stigmas ± peltate with convolute edges; styles shorter than ovary. *Flowers pale cream; May to August.* On various hosts, mainly shrubby, often on Acanthaceae, on floors and edges of lowland and upland rain forests. *Taylor 658.*

W	S	C	N	E
---	---	---	---	---

planiflora *Ten.* var. **planiflora**

(= *C. planiflora* *Ten.* var. *mossamedensis* *Hiern*)

Twining parasite. Flowers almost smooth or sparsely papillate. Calyx 1.5–3.5 mm in diameter. Corolla 1.5–2.5 mm long. Styles 2, free to base; stigmas linear; styles and stigmas together 0.5–1.0 mm long. *Flowers white; May.* On a great variety of herbaceous plants of mopane woodland, in grassland and seasonally damp and granitic and sandy soil. *Moss 16852.*

W	S	C	N	E
---	---	---	---	---

planiflora *Ten.* var. **madagascarensis** (*Yunck.*) *Verdc.*

(= *C. madagascarensis* *Yunck.*)

Twining parasite. Flowers almost smooth or sparsely papillate. Calyx 3–5 mm in diameter. Corolla 2.0–3.5 mm long. Lobes of calyx and corolla obtuse. Styles 2, free to base; stigmas linear; styles and stigmas together 1.0–2.2 mm long. *Flowers whitish; April.* On low, herbaceous or suffrutescent dicotyledons. *Gerber 5678.*

W	S	C	N	E
---	---	---	---	---

suaveolens *Ser.**

(= *C. medicaginis* *C.H. Wright*)

Twining parasite. Inflorescence a very loose cluster. Calyx lobes obtuse or abruptly acute. Scales in corolla tube free, not bifid at apex, not reaching base of free part of filaments. Styles 2, free to base; stigmas globose. *Flowers white; January.* Usually on *Medicago sativa* (lucerne). Native to South America. *Rattray 830.*

W	S	C	N	E
---	---	---	---	---

Dichondra *J.R. & G. Forst.* (s. Afr.):

1 sp.)

6971000

Meeuse. 1958. *Bothalia* 6: 657–658.

Gonçalves. 1987. *F.Z.* 8,1: 10–11.

repens *J.R. & G. Forst.* var. **repens**

Appressed-pubescent, procumbent herb. Stems rooting at nodes. Leaf lamina reniform to cordate-circular, broadly cordate at base, entire. Flowers solitary, axillary. *Flowers white or greenish; September to May.* Weed in grassland, lawns, paths and cultivated areas. *Scheepers 256.*

W	S	C	N	E
---	---	---	---	---

Evolvulus *L.* (s. Afr.: 2 spp.)

6973000

Meeuse. 1958. *Bothalia* 6: 661–662.

Gonçalves. 1987. *F.Z.* 8,1: 12–16.

alsinoides (*L.*) *L.* var. **linifolius** (*L.*) *Baker*

(= *Convolvulus alsinoides* *L.*,

= *C. linifolius* *L.*)

Decumbent or erect annual or perennial herb, thinly or sometimes densely covered with long patent silky hairs. Leaves elliptic, ovate-oblong, lanceolate to linear-oblong, mucronate. Inflorescence axillary, 1–few-flowered. Corolla shallowly lobed. Capsule 2-locular. *Flowers blue, rarely white; July to June.* Woodlands, grasslands, savanna, edges of thickets, roadsides, sandy soils and weed of cultivated land. *Arnold 354.*

W	S	C	N	E
---	---	---	---	---

Falckia *Thunb.* (s. Afr.: 2 spp.)

6972000

Meeuse. 1958. *Bothalia* 6: 658–661.

Gonçalves. 1987. *F.Z.* 8,1: 12.

Wijnands & Meeuse. 1990. *Bothalia* 20: 208.

oblonga *Bernh. ex O. Krauss* var. **oblonga**

(= *F. abyssinica* *Engl.*)

Prostrate perennial herb. Leaves oblong to lanceolate-oblong or lanceolate, truncate or slightly cuneate at base, silvery silky, appressed pilose beneath. *Flowers small, solitary, axillary, white to pale pink or mauve; September to January.* In damp grassland and saline sandy clays. *Turner 1125.*

W	S	C	N	E
---	---	---	---	---

Hewittia *Wight & Arn.* (s. Afr.: 1 sp.)

6995000

Gonçalves. 1987. *F.Z.* 8,1: 31.

sublobata (*L.f.*) *Kuntze*

(= *H. bicolor* (*Vahl*) *Wight & Arn.*,

= *Convolvulus sublobatus* *L.f.*)

Twining or prostrate perennial herb. Leaf oblong or ovate to broadly ovate, cordate, hastate, cuneate or sometimes truncate at base, dentate or entire, pilose to velvety on both surfaces. Corolla 20–35 mm long. *Flowers pale yellow or white, usually with purple or claret centre; September to April.* Mixed open forest, along dry watercourse, grassland, weed of cultivated lands, roadsides. *Codd 5728.*

W	S	C	N	E
---	---	---	---	---

Ipomoea *L.* (s. Afr.: 52 spp.)

7003000

Meeuse. 1958. *Bothalia* 6: 711–772.

Meeuse. 1958. *Bothalia* 7: 26–27.

Gonçalves. 1987. *F.Z.* 8,1: 55–127.

adenioides *Schinz*

(= *I. marlothii* *Engl.*)

Shrub, up to 1.2 m high. Leaves entire, lanceolate or oblanceolate to elliptic. Flowers solitary. Sepals very

long-acuminate. Corolla very long salver-shaped, up to 110 mm long. Seeds covered with long hairs. *Flowers white or pink, deep magenta inside; October to May.* Limestone pavement and sandy loam soil. *Codd 6293.*

W S C N E

alba L.*

(= *Calonyction aculeatum* (L.) House,
= *Convolvulus aculeatus* L.)

Twining or prostrate annual or perennial herb. Leaves ovate or circular in outline, entire or 3-lobed. Inflorescence 1–several-flowered. Sepals distinctly awned. Corolla tube 70–120 mm long. Seeds glabrous. *Flowers white or greenish cream below, opening at night; February.* Grassland, riverbanks, waste places and roadsides. Native to America. *De Winter 7552.*

W S C N E

albivenia (Lindl.) Sweet

(= *I. gerrardii* Hook. f.,
= *Convolvulus albivenius* Lindl.)

Climbing shrub, with white somewhat floccose tomentum. Leaves glabrescent beneath, becoming reticulate owing to dense tomentum on main nerves and veins. Flowers 65–145 mm long. Sepals broadly oblong, 15 mm long. Seeds with long hairs. *Flowers white, cream or yellowish with mauve tube; August and December to March.* Woodland, savanna with trees, moist ground and sandy soil. *Codd 5445.*

W S C N E

arachnosperma Welw.

(= *I. pilosa* (Roxb.) Sweet)

Twining or prostrate annual herb. Leaves broadly cordate-ovate in outline, deeply 3-lobed, rarely entire, covered with dense white cottony tomentum beneath. Sepals lanceolate, long acuminate or aristate; bristly or setose and glandular. Corolla 14–20 mm long. *Flowers pink or mauve with darker mauve centre; November and March to May.* Riverine forest, secondary savanna, grassland, cultivated ground, roadsides and sandy soil. *Codd & Dyer 7730.*

W S C N E

atherstonei Baker

Prostrate perennial herb. Leaf lamina from a broad base oblong to ovate-elliptic, hairy on both surfaces. Flowers in pedunculate few-flowered heads. Sepals 18–35 mm long, lanceolate to ovate. *Flowers magenta; September to February.* Open savanna, grassland, sandy soil. *Codd 8255.*

W S C N E

batatas (L.) Lam.*

(= *Convolvulus batatas* L.)

Prostrate or twining perennial herb. Leaves triangular to broadly ovate in outline, entire or 3–7-lobed, base truncate or cordate. Sepals mucronate. Corolla campanulate, 30–45 mm long. Seeds glabrous. *Flowers pale mauve, white above.* Escaped from cultivation. Native of tropical America. *Krige 144.*

W S C N E

bathycolpos Hallier f. var. **bathycolpos**

Prostrate perennial herb. Leaves cordate-elliptic or rounded to subreniform, obtuse with minute cusps, basal sinus narrow and deep. Sepals obtuse, 12–18 mm long. Corolla 35–50 mm long. Seeds with villous tomentum. *Flowers pale mauve to almost white with darker, mauve-magenta centre; October to March.* Grassland, rocky places and disturbed places. *De Winter 2178.*

W S C N E

bathycolpos Hallier f. var. **sinuatodentata** Hallier f.

Prostrate perennial herb. Leaves larger and with large irregular teeth. Sepals as in var. *bathycolpos*. Corolla up to 70 mm long. *Flowers pale mauve to almost white with darker, mauve-magenta centre; January.* Grassland. *Marais 69.*

W S C N E

bisavium A. Meeuse

Perennial climber. Leaves ovate-cordate to elongate-cordate, entire or faintly crenate; acuminate to attenuate and mucronate at apex, broadly and shallowly cordate to subtruncate at base, with rounded basal lobes. Inflorescence cymosely few-flowered, pedunculate. Outer sepals cordate-triangular, bi-auriculate by basal lobes of cordate base, subacuminate, subobtusate at apex, margin undulate. Corolla ± 20 mm long. *Flowers white with lower part of tube purple-mauve inside; April to May.* Dry rocky hillside. *Meeuse 10181.*

W S C N E

bolusiana Schinz

(= *I. angustisecta* Engl.,
= *I. mesenterioides* Hallier f.)

Erect or prostrate perennial herb. Leaf lamina palmately 3–9-sect, with narrow linear or filiform segments or entire, linear, sometimes linear spatulate. Corolla 40–75 mm long. Seeds covered with long hairs. *Flowers magenta-pink, mauve or rosy purple, darker in centre; August to April.* Open woodland and savanna, grassland with scattered shrubs, rocky and sandy soils. *Codd & De Winter 5105.*

W S C N E

cairica (L.) Sweet

(= *I. palmata* Forssk.,
= *Convolvulus cairicus* L.)

Twining or prostrate perennial herb. Leaves palmately divided into 5–7 lobes; lobes lanceolate to ovate, elliptic or somewhat oblanceolate. Flowers solitary or in few-flowered cymes. Sepals 4.0–6.5 mm long, sometimes verruculose. Corolla 45–60 mm long. *Flowers purple, red or white with purple centre and purple tinge on outside of limb or rarely entirely white; November to August.* Rain forest, bushland, swampy grassland, river edges, roadsides. *Onderstall 749.*

W S C N E

chloroneura Hallier f.

Ascending or prostrate annual herb, up to 300 mm tall. Young stems with long yellow hairs. Leaf lamina en-

tire, elliptic, oblong or lanceolate to oblanceolate or elliptic-ovate, cuneate, with silvery appressed hairs beneath, discolorous. Sepals aristate. Corolla $\pm$ 15 mm long. *Flowers white or pale yellow-green; January to May.* Woodland, savanna, grassland and sandy soil. *Galpin 235.*

W S C N E

congesta R. Br.

(= *I. purpurea* Baker & Wright p.p. non (L.) Roth)

Perennial climbing herb. Leaf lamina ovate in outline, entire or prominently 3-lobed, cordate at base, lobes acuminate; pilose to glabrescent. Sepals lanceolate, softly pubescent or glabrescent. Corolla 50–80 mm long. *Flowers blue or mauve-purple, often tinged red; January to March.* Cultivated as ornamental, naturalized in waste places. *Meeuse 9031.*

W S C N E

optica (L.) Roth ex Roem. & Schult. var. optica

(= *I. dissecta* Willd.,
= *Convolvulus opticus* L.)

Prostrate or twining annual herb. Stems 4-angled, longitudinally striate. Leaves digitately 5-lobed, lobes elliptic or ovate, deeply divided or toothed. Sepals oblong or elliptic, 4–5 mm long. Corolla $\pm$ 12 mm long. *Flowers white, pink or white with purple throat; December to May.* Open mopane woodland, dry forest thicket, savanna, bushland, grassland, moist sands and cultivated fields. *Codd 8446.*

W S C N E

coscinosperma Hochst. ex Choisy

Suberect to prostrate annual herb. Leaf lamina narrowly linear-lanceolate to oblong, entire; rounded, cuneate or shallowly cordate at base, glabrescent, pilose or hairy. Inflorescence 1–3-flowered, subsessile. Sepals ovate, pilose. Corolla 10 mm long. *Flowers red or white; January to April.* Damp sand of riverine areas and cultivated ground. *Meeuse 9526.*

W S C N E

crassipes Hook.

(= *I. adumbrata* Rendle & Britten,
= *I. bellecomans* Rendle)

Erect or creeping perennial herb. Leaves ovate, elliptic or oblong to lanceolate, base truncate, rounded or slightly hastate or subcordate, mostly covered on both surfaces with long fulvous hairs. Sepals ovate, acute or drawn out to narrow point, rounded or subcordate at base. Corolla 30–65 mm long. *Flowers white, red or white with darker purple centre; September to June.* Woodland, savanna, grassland and sandy soil. *Codd 2209.*

W S C N E

eriocarpa R. Br.

(= *I. hispida* (Vahl) Roem. & Schult.,
= *Jacquemontia thomensis* Henriq.)

Twining or prostrate annual herb. Leaves entire, ovate-cordate to linear-oblong, subhastate at base with rounded lobes. Inflorescence (1)3–many-flowered, subsessile or

peduncle up to 15 mm long. Sepals ovate, acuminate, hispid-pilose. Corolla up to 10 mm long. Capsule hairy. Seeds finely punctate, glabrous. *Flowers mauve, white, pink or white with mauve centre; March to July.* Savanna woodland, grassland, alluvial and sandy soils and cultivated ground. *Zambatis 1390.*

W S C N E

gracilisepala Rendle

(= *I. xiphosepala* Baker)

Procumbent or trailing herb. Leaves entire or subrepand, oblong or lanceolate-oblong to lanceolate, hastate-truncate or auricled at base. Inflorescence 1- or 2-flowered, sessile or very shortly pedunculate. Sepals lanceolate to linear, acuminate. Corolla 12–15 mm long. Capsule hirsute; seeds with villous tomentum of appressed stiff hairs. *Flowers mauve or white; September and December to June.* Grassland and damp land near rivers. *Codd & Dyer 7726.*

W S C N E

hackeliana (Schinz) Hallier f.

(= *Aniseia hackeliana* Schinz)

Prostrate annual herb. Leaves ovate-cordate with distinctly crenate or crenate-dentate margin. Outer sepals ovate with cordate base. Corolla 10–13 mm long. Capsule densely pilose; seeds hairy. *Flowers white or mauve; September and January to February.* Open woodland, savanna, sandy soil and roadsides. *Meeuse 9194.*

W S C N E

hochstetteri House

(= *I. kwebensis* N.E. Br.,
= *I. quinquefolia* Hochst. ex Hallier f.)

Twining or prostrate annual herb. Leaves palmately divided to base into 5 lobes, lobes elliptic, outer 2 lobes deeply or completely redivided. Inflorescences cymosely 1–6-flowered, pedunculate; peduncle thick. Sepals ovate, acute, mucronulate. Corolla 19–24 mm long. Seeds densely tomentose with long hairs on margins. *Flowers white or mauve; November to May.* Sandy soils and roadsides. *Meeuse 9075.*

W S C N E

involucrata P. Beauv.

Twining annual or perennial herb. Leaf lamina ovate-cordate, acute or acuminate at apex, hairy to villous on both surfaces. Flowers in heads subtended by boat-shaped involucre. Sepals lanceolate, acute. Corolla up to 55 mm long. *Flowers purple, rose, white or white with pink throat; June and September.* Secondary woodland, open and marginal forest, bushland, grassland, weed of cultivation, sandy soils and roadsides. *Netshiungani 644.*

W S C N E

lapathifolia Hallier f.

(= *I. zambesiaca* Baker)

Twining or prostrate perennial herb. Leaves broadly ovate to elliptic, oblong, lanceolate or linear, entire; rounded or truncate at base. Flowers in dense cymes;

peduncle 35–270 mm long. Sepals triangular to oblong or lanceolate-oblong from broad base, glabrous. Corolla 20–55 mm long. *Flowers white often with magenta or mauve centre; December to April.* Woodland, savanna, grassland, swampy places, roadsides. *Meeuse 9633.*

W S C N E

magnusiana Schinz var. **magnusiana**

(= *I. lugardii* N.E. Br. var. *parviflora* Rendle,
= *I. otjikangensis* Pilg. & Dinter)

Prostrate or suberect perennial herb. Leaves palmately 3- or 5-lobed nearly to base, densely covered with white cobwebby tomentum beneath. Sepals lanceolate, acute, hairy. Corolla 12–20 mm long. Seeds pubescent, hairs often in small tufts and sometimes with long hairs along angles. *Flowers magenta-purple, mauve, cream or white with darker magenta centre; July to June.* Forest, savanna, grassland, roadsides and sandy soil. *Codd 5327.*

W S C N E

magnusiana Schinz var. **eenii** (Rendle) A. Meeuse

(= *I. eenii* Rendle,
= *I. lugardii* N.E. Br.)

Perennial climbing herb. Leaves, sepals and seeds as in var. *magnusiana*. Corolla 20–32 mm long. *Flowers magenta-purple, mauve, cream or white with darker magenta centre; September to May.* Scrubland, woodland, savanna, often in sandy soil. *Codd 4801.*

W S C N E

nil (L.) Roth*

(= *I. hederacea* auctt. non (L.) Jacq.,
= *Convolvulus nil* L.)

Twining annual herb. Leaves ovate to circular in outline, 3-lobed, cordate at base; middle lobe ovate to oblong, acuminate; lateral ones obliquely ovate to broadly falcate, acuminate. Sepals linear-lanceolate, 23–28 mm long, long-attenuate at apex, basal part alone bristly. Corolla 55–70 mm long. *Flowers magenta with paler tube; April.* Woodland, grassland and waste ground. Probably a native of Africa. *Zantovska 5.*

W S C N E

obscura (L.) Ker Gawl. var. **obscura**

(= *Convolvulus obscurus* L.,
= *I. obscura* (L.) Ker Gawl. var. *fragilis* (Choisy) A. Meeuse)

Prostrate or twining perennial herb. Leaves ovate, acuminate or apiculate at apex, cordate at base, entire or undulate and often ciliate along margin. Sepals ovate, ovate-orbicular, ovate-lanceolate or lanceolate. Corolla 15–25 mm long. Seeds black, appressed pubescent or velvety. *Flowers yellow, orange, cream or white, concolorous or with purple centre; August to May.* Woodland, bushland, savanna, grassland, sandy soils, cultivated ground and roadsides. *Meeuse 9017.*

W S C N E

oenotherae (Vatke) Hallier f.

(= *Convolvulus oenotherae* Vatke,
= *I. ceciliae* N.E. Br.)

Prostrate or ascending perennial herb. Leaves subpalmately or pinnately 3–7-lobed with linear to lanceolate

lobes, middle ones longest and often lobed or dentate at first, with soft silvery white hairs, glabrescent. Sepals ovate or ovate-lanceolate, aristate, ciliate with median keel of hairs. Corolla up to 50 mm long. *Flowers mauve to purple; November to March.* Mixed woodland, grassland, sandy soil. *Meeuse 9022.*

W S C N E

ommaneyi Rendle

Trailing perennial herb. Leaf lamina ovate-lanceolate or oblong-lanceolate, rounded to shallowly cordate at base, densely covered on both surfaces with silvery white hairs, densely yellow-ciliate on margin. Flowers several together in dense head. Sepals lanceolate, 20–35 mm long, acuminate-cuspidate. Corolla 50–70(–90) mm long. *Flowers rose-magenta; October to April.* Pans, roadsides and rocky soil. *Meeuse 10566.*

W S C N E

papilio Hallier f.

Trailing or climbing perennial herb. Leaves broadly cordate or cordate-reniform to cordate-ovate, abruptly acuminate; entire or irregularly lobed or toothed in lower half. Sepals oblong, elliptic or ovate to somewhat spatulate, obtuse, minutely mucronate. Corolla 20–35 mm long. Seeds shortly pubescent. *Flowers light magenta or purplish; September to May.* Woodland, open bushland, grassland and roadsides. *Meeuse 9587.*

W S C N E

pellita Hallier f.

(= *I. ovata* E. Mey. ex Rendle)

Prostrate perennial herb. Leaves ovate to oblong, entire; rounded, truncate or shallowly cordate at base, margin with dense yellowish fringe of hairs. Flowers in dense few-flowered head on long peduncle, peduncle bristly. Sepals linear to linear-subulate, very bristly, gradually tapering into acute point. Corolla 40–70 mm long. *Flowers magenta; January to February.* Grassland and disturbed places. *Meeuse 9064.*

W S C N E

pes-tigridis L. var. **pes-tigridis**

(= *I. pes-tigridis* L. var. *africana* Hallier f.)

Trailing annual or sometimes perennial herb. Leaves circular to somewhat reniform in outline, palmately pedately 7–9-lobed, broadly cordate at base, lobes narrowly oval to obovate, lateral ones gradually smaller. Flowers in few-flowered bracteate heads, bracts foliaceous. Sepals lanceolate, hairy. Corolla 30–50 mm long. *Flowers white, pink or purple with darker throat; January.* Forest, savanna, bushland, grassland, riverside, cultivated ground, sandy soil. *Van der Schijff 1775.*

W S C N E

pileata Roxb.

Twining annual or sometimes perennial herb. Leaves ovate, acute or acuminate, cordate. Inflorescence few-to many-flowered head enclosed in boat-shaped involucre, pedunculate. Outer sepals oblong-spatulate

to oblong, obtuse; inner ones lanceolate with long and slender point. Corolla up to 25 mm long. *Flowers pink or white with darker centre; March.* Woodland, deciduous thicket, grassland, riverbanks, roadsides, rocky and sandy soil. *Galpin 882.*

W S C N E

plebeia R. Br. subsp. **africana** A. Meeuse

(= *I. cynanchifolia* Baker & Rendle,
= *I. geminiflora* Welw. p.p.)

Twining or prostrate annual herb. Leaves triangular-ovate, entire, cordate at base with basal lobes rounded, acuminate at mucronate apex. Sepals ovate triangular, acute or acuminate, ± with ciliate margins, sparsely pilose. Corolla 6–9 mm long. Seeds shortly pubescent. *Flowers white with purple centre; October to May.* Woodland, dry bush, grassland, alluvial zones, roadsides and cultivated land. *Zambatis 1549.*

W S C N E

purpurea (L.) Roth*

(= *Convolvulus purpureus* L.,
= *I. gerrardiana* Rendle)

Trailing or twining annual herb. Leaves ovate to sub-circular in outline, entire or 3-lobed, base cordate with broadly rounded auricles, apex acuminate. Outer sepals oblong, acute with bristly patent hairs in basal portion; inner ones linear-oblong to linear, acute, 10–15 mm long. Corolla 45–60 mm long. *Flowers white, pink or magenta, tube white below; December to May.* Woodland, bushland, grassland and waste ground. Native to South America. *Meeuse 9233.*

W S C N E

shirambensis Baker

Twining perennial shrub, up to 7.5 m high. Leaves ovate to circular or narrowly triangular, abruptly acute or acuminate and minutely apiculate at apex, truncate or cordate at base, entire. Flowers appearing before leaves on older shoots, in fascicle-like cymes. Sepals oblong-lanceolate, acute and apiculate. Corolla 35–60 mm long. *Flowers white or purple; September to October.* Woodland, deciduous thicket, bushland, roadside and sandy soil. *Codd & Dyer 4560.*

W S C N E

simplex Thunb.

(= *I. plantaginea* (Choisy) Hallier f.)

Erect perennial herb, up to 100 mm tall. Leaves linear to lanceolate, entire or with few pinnately arranged teeth or lobes, acuminate or acute at apex; long-tapering and almost sessile or sometimes rounded with distinct petiole. Sepals lanceolate or oblong-lanceolate to ovate-lanceolate, acute. Corolla 20–35 mm long. *Flowers white; October to December.* Grassland and disturbed areas. *Galpin 12982.*

W S C N E

sinensis (Desr.) Choisy subsp. **blepharosepala** (Hochst. ex A. Rich.) Verdc.

(= *I. blepharosepala* Hochst. ex A. Rich.,
= *I. cardiosepala* Hochst. ex Baker & Wright)

Prostrate or twining annual herb. Leaves ovate to oblong-ovate, broadly cordate or subhastate at base, obtuse to bluntly acute at apex. Sepals ovate to lanceolate, widened to cordate or subhastate base, 2 × 2–3 mm, with narrow lanceolate 4 × 1 mm acute apex. Corolla up to 13 mm long. *Flowers pink or mauve with dark centre; October to July.* Woodland, grassland, cultivated land, sandy and calcareous soil and roadsides. *Codd 2713.*

W S C N E

tenuipes Verdc.

(= *I. heptaphylla* sensu Meeuse non (Roxb.) Voigt,
= *I. pulchella* sensu Baker & Rendle non Roth)

Twining or prostrate annual or perennial herb. Leaves circular in outline, palmately divided to base; lobes elliptic to lanceolate, entire. Peduncle slender, filiform. Sepals elliptic or almost orbicular, obtuse but mucronulate, often muriculate. Corolla 8–17 mm long. Capsule 4-valved; seeds with velvety pubescence and 5–10 mm long hairs. *Flowers rose-purple or dark mauve; May to July.* Riverine forest, savanna, grassland, riverbanks and cultivated ground. *Smuts & Gillett 3535.*

W S C N E

transvaalensis A. Meeuse

(= *I. convolvuloides* Hallier f.)

Suberect or prostrate perennial herb. Leaves triangular, oblong or ovate, densely pilose with long silvery hairs; obtuse, acute or acuminate at apex; emarginate or cordate at base, entire. Sepals oblong or lanceolate, acute, thinly and softly hairy outside. Corolla 35–55 mm long. *Flowers magenta, pink or white with purple centre; September to March.* Among rocks or rocky hillsides in grassland or bushveld. *Meeuse 9018.*

W S C N E

wightii (Wall.) Choisy

(= *Convolvulus wightii* Wall.)

Perennial climber or twining or prostrate herb. Leaves ovate-cordate, entire or shallowly to deeply 3-lobed; lobes acute and margins entire or crenate; covered with floccose-arachnoid tomentum below, appearing white. Flowers in few- to many-flowered, dense to somewhat lax, pedunculate heads. Sepals linear to ovate-lanceolate, obtuse or acuminate, with 3 kinds of indumentum: white-cottony, appressed or spreading yellow bristles and sessile or stalked marginal glands (1 or more sometimes absent). Corolla 20–35 mm long. *Flowers magenta or mauve; October to July.* Forest, bushland, grassland, riversides and sandy soil. *Codd 7811.*

W S C N E

Jacquemontia Choisy (s. Afr.: 1 sp.) 6991000

Gonçalves. 1987. F.Z. 8, 1: 22–25.

tamnifolia (L.) Griseb.

(= *J. capitata* (Desr.) G. Don,
= *Ipomoea tamnifolia* L.)

Twining annual herb. Leaves and stems distinctly pubescent or hairy. Flowers crowded into bracteate heads; bracts 20 mm long. *Flowers blue; August, December and March to May.* Woodland, edge of thicket, grassland, riverine woods, damp sandy ground, cultivated land. *Van der Schijff 2425.*

W S C N E

Merremia *Dennst.* (s. Afr.: 10 spp.) 6997000

Gonçalves, 1987. F.Z. 8,1: 34–43.

kentrocaulos (C.B. Clarke) Rendle

(= *Ipomoea kentrocaulos* C.B. Clarke,
= *Operculina kentrocaulos* (C.B. Clarke) Hallier f.)

Twining perennial herb. Stems usually muriculate. Leaf lamina 5–7-lobed; lobes elliptic-oblong lanceolate, pinnatifid, up to 65 × 20 mm. Sepals 20–30 mm long. Corolla 35–55 mm long. *Flowers yellow or white with dark purple centre; July to April.* Woodland, open forest scrubland, grassland; sandy and rocky soils. *Codd 5342.*

W S C N E

palmata Hallier f.

Prostrate or twining perennial herb. Leaf lamina 5–9-lobed; lobes linear to lanceolate, up to 70 × 14 mm. Sepals 8–12 mm long. Corolla 20–30 mm long. Bracts small, linear. Capsule papery. *Flowers pale yellow or sulphur-yellow with deep red, maroon or deep magenta centre; October to May.* Open dry deciduous bushland or woodland, roadsides; in sandy soils. *Meeuse 9145.*

W S C N E

pinnata (Hochst. ex Choisy) Hallier f.

(= *Ipomoea pinnata* Hochst. ex Choisy)

Trailing or twining annual herb. Leaf lamina pinnately lobed; lobes narrow and linear. *Flowers white, greenish white, cream or yellow; September to October and January to April.* Woodland, mixed savanna woodland, riverine forest, grassland, riverside, sandy roadsides. *Pienaar 362.*

W S C N E

tridentata (L.) Hallier f. subsp. **angustifolia** (Jacq.)

Ooststr. var. angustifolia

(= *M. angustifolia* (Jacq.) Hallier f.,
= *M. tridentata* (L.) Hallier f. subsp. *hastata* (Desr.) Ooststr.)

Prostrate or twining perennial herb. Leaf lamina entire or 3-lobed, oblong to lanceolate, much longer than broad, base hastate, sagittate or truncate, margin crenate or entire. *Flowers pale yellow, cream, green or white, often with darker reddish or brownish centre; September to May.* Woodland, savanna, grassland, roadsides, riversides; sandy soils and weed of cultivation. *Meeuse 9034.*

W S C N E

verecunda Baker & Rendle

(= *Ipomoea verecunda* (Rendle) N.E. Br.,
= *I. quinquefolia* Hochst. ex Hallier f. var. *pubescens* Baker)

Trailing herb. Leaf lamina palmately to pedately 7–11-lobed. Sepals 10–15 mm long in flower, inflated in fruit enclosing capsule completely. Corolla up to 20 mm long. *Flowers yellow or whitish with purple centre; November to March and June to July.* On patches of grass in deep dry sand. *Codd & Dyer 7715.*

W S C N E

Seddera *Hochst.* (s. Afr.: 2 spp.) 6978000

Meeuse, 1958. Bothalia 6: 662–664.
Gonçalves, 1987. F.Z. 8,1: 16–19.

capensis (E. Mey. ex Choisy) Hallier f.

(= *Evolvulus capensis* E. Mey. ex Choisy,
= *Bonamia capensis* (E. Mey. ex Choisy) Burt Davy)

Prostrate to suberect subshrub. Flowers always solitary, sessile or very rarely pedicellate. Calyx 7–10 mm long, sepals ciliate with bulbous-based hairs. Corolla ± 10 mm long. Pubescence usually distinctly brown or ferrugineous with bulbous-based hairs. *Flowers pinkish white; September to April.* Wet veld. *Acoks 20831.*

W S C N E

suffruticosa (Schinz) Hallier f. var. **suffruticosa**

(= *Convolvulus mucronatus* Engl.)

Erect or spreading subshrub or perennial herb, up to 0.6 m high, not densely hairy. Flowers usually in few-flowered axillary cymes, rarely all solitary, sessile or pedunculate. Calyx usually only 4–7 mm long. Corolla usually 6–7 mm long. Pubescence white or grey without bulbous-based hairs. *Flowers white or yellowish; October to July.* Open forest, mopane woodland, open grassy savanna, dry bush and scrub, stony and sandy soils and roadsides. *Theron 1067.*

W S C N E

suffruticosa (Schinz) Hallier f. var. **hirsutissima** Hallier f.

(= *Breweria suffruticosa* Schinz var. *hirsutissima* (Hallier f.) Baker & Wright)

Erect or spreading subshrub or perennial herb, up to 0.6 m high. Flowers and pubescence as in var. *suffruticosa* but plant densely hairy, especially inflorescences hirsute, somewhat more robust and with larger leaves. *Flowers white or yellowish; November to December and in April.* Savanna, grassland, scrub, on Kalahari sand and serpentine soil. *Codd 8659.*

W S C N E

Turbina *Raf.* (s. Afr.: 7 spp.) 7008010

Meeuse, 1958. Bothalia 6: 773–784.

holubii (Baker) A. Meeuse

(= *Ipomoea holubii* Baker,
= *I. rhodesiana* Rendle)

Erect, decumbent or climbing shrub, up to 2.5 m high. Leaf lamina ovate-cordate to circular-cordate, entire,

often folded along midrib, sericeous to tomentose on both surfaces. Sepals elliptic to obovate or orbicular to obovate-spathulate, obtuse and mucronate or apiculate, greyish pubescent to tomentose. Corolla funnel-shaped, up to 75 mm long. *Flowers pale mauve or pinkish with magenta centre; February to April.* Woodland, bushland, grassland, roadsides and rocky soil. *Codd 4002.*

W S C N E

oblongata (*E. Mey. ex Choisy*) *A. Meeuse*

(= *Ipomoea oblongata* E. Mey. ex Choisy,
= *I. randii* Rendle)

Prostrate or suberect perennial herb. Leaf lamina usually oblong or elliptic, covered with strigose yellowish hairs, leaves tending to become more linear in Mpumalanga. Sepals lanceolate to ovate-lanceolate, acute or acuminate with very acute tips, outer ones densely covered with stiff yellowish hairs. Corolla 35–60 mm long. *Flowers magenta; October to April.* Woodland, savanna, grassland, wet and sandy soils. *Codd 3463.*

W S C N E

oenotheroides (*L.f.*) *A. Meeuse*

(= *Convolvulus oenotheroides* L.f.,
= *Ipomoea argyreoides* Choisy)

Erect perennial shrub, 0.3–1.0 m high, covered with short silvery adpressed pubescence. Leaves entire, linear to oblanceolate or lanceolate, base decurrent into short petiole, apex acute or obtuse, mucronate. Sepals lanceolate, acute or subacute. Corolla 35–70 mm long, funnel shaped. *Flowers bright magenta or magenta-pink; November to February.* Grassland, often in sand. *Hanekom 2012.*

W S C N E

robertsiana (*Rendle*) *A. Meeuse*

(= *Ipomoea robertsiana* Rendle,
= *I. uncinata* Hutch.)

Prostrate perennial herb. Leaves linear-lanceolate to ovate-lanceolate or ovate-oblong, often with crisped margin and folded on midrib, frequently with recurved mucronate apex, narrowed to rounded at base, glabrous above, lower surface covered, like rest of plant, with stiff white ± spreading hairs. Sepals ovate-lanceolate to

linear-lanceolate, Corolla 50–70 mm long. acute to acuminate to aristate. Seeds shortly velutinous. *Flowers magenta; November to April.* Grassland or disturbed places; sandy or stony soil. *Meeuse 9463.*

W S C N E

shirensis (*Oliv.*) *A. Meeuse*

(= *Ipomoea shirensis* Oliv.,
= *Porana subrotundifolia* De Wild.)

Woody climber, up to 15 m high. Stamens inserted on large, triangular, glandular-pilose scales situated near base of corolla tube. Ovary with very short beak persistent in fruit. Style articulated at base, caducous. Fruit indehiscent, ± woody. *Flowers white; April.* Woodland, dry riverine forest, grassland, sandy soil and roadsides. *Van der Schijff & Marais 3723.*

W S C N E

stenosiphon (*Hallier f.*) *A. Meeuse*

(= *Ipomoea stenosiphon* Hallier f.)

Woody climbing shrub, up to 10 m high. Leaf lamina ovate, obtusely acute or emarginate at mucronate apex, cordate at base, glabrous or ± pubescent, entire or ± subrepand, lower surface dotted with numerous small circular glands. Sepals elliptic obtuse, glabrous or slightly pubescent. Corolla hypocrateriform, tube up to 150 mm long. *Flowers white; December to March.* Woodland, riverbanks, boulders and roadsides. *Gerstner 5897.*

W S C N E

suffruticosa (*Burch.*) *A. Meeuse*

(= *Ipomoea suffruticosa* Burch.,
= *I. contorta* Engl.)

Prostrate or suberect perennial herb. Vegetative parts (except upper surface of older leaves), peduncles and calyces densely and shortly silvery-tomentose, sometimes whitish silky. Leaves petiolate, elliptic-oblong, ovate or lanceolate-oblong, acute with recurved mucronate apex to obtuse or slightly retuse, base rounded to truncate or subcordate. Sepals lanceolate or oblong, acuminate, acute. Corolla 40–50 mm long. *Flowers rosy purple.* Grassland in sandy soil. *Morris 1229.*

W S C N E

CORNACEAE

Trees. Leaves leathery, opposite, simple, petioled, ovate-elliptic or oblong, coarsely toothed, glossy above, prominently veined and pubescent; petiole densely hairy. Flowers small, in terminal panicles, densely hairy. Calyx with turbinate, somewhat 4-angled tube and 4 triangular-ovate, persistent lobes. Petals 4, valvate, pubescent outside, twice as long as calyx lobes. Ovary inferior, 4-locular. Fruit a drupe, reticulately veined, crowned by calyx lobes.

Curtisia Aiton (s. Afr.: 1 sp.)

6156000

Cannon. 1978. F.Z. 4: 635–637.

dentata (Burm. f.) C.A. Sm.(= *C. faginea* Aiton)

Small tree or shrub, up to 8(–13) m high. Leaves opposite, simple, ovate (elliptic), coriaceous. Margins

± regularly serrate in apical half. Young leaves densely rusty tomentose below. *Flowers white, cream or pinkish; September to March.* Montane forest and stream gullies. *Codd & Dyer 9117.*

W S C N E

CRASSULACEAE

Herbs or shrublets, usually succulent. Leaves opposite or alternate, often in a basal rosette, without stipules. Flowers regular. Petals 4 or 5, free or united. Stamens as many as or twice as many as petals, free. Ovaries 4 or 5, separate or slightly joined at base only, superior; nectar gland present at base of each ovary. Fruit usually comprising free follicles.

Key after Toelken in F.S.A. 14: 1 (1985).

- 1a Leaves spirally arranged, often in dense clusters; thyse with monochasia, often single-flowered or spike-like **Adromischus**
- 1b Leaves opposite or in whorls, at least on vegetative branches; inflorescence a thyse with dichasia ending in a single terminal or axillary flower 2
- 2a Opposite leaves ± fused to one another; stamens as many as calyx lobes **Crassula**
- 2b Leaves (opposite or spirally arranged) free; stamens twice as many as calyx lobes 3
- 3a Flowers 5-merous **Cotyledon**
- 3b Flowers 4-merous 4
- 4a Flowers erect; filaments fused to corolla tube at or above middle **Kalanchoe**
- 4b Flowers pendulous; filaments fused to corolla tube in lower third **Bryophyllum**

Adromischus Lem. (s. Afr.: 27 spp.) 3175000

Toelken. 1985. F.S.A. 14: 37–60.

umbraticola C.A. Sm. subsp. **umbraticola**

Succulent perennial herb with short, erect branches, branches 20–40(–60) mm long, much-branched and tuberous at base. Leaves grey-green or glaucous. Corolla with club-shaped trichomes in throat and on lower parts of lobes. *Flowers pink; November to December.* Rock crevices. *Theron 1984.*

W S C N E

umbraticola C.A. Sm. subsp. **ramosus** Toelken

Succulent perennial herb with short, erect branches, branches (40–)60–120 mm long, little branched and tuberous at base. Leaves green, often tinged brown, rarely grey-green. Corolla without club-shaped trichomes. *Flowers pale green ± tinged pink.* Rock crevices. *Toelken 1215.*

W S C N E

Bryophyllum Salisb. (s. Afr.: 1 sp.) 3165000

Toelken. 1985. F.S.A. 14: 73–74.

delagoense (Eckl. & Zeyh.) Schinz*(= *B. tubiflorum* Harv.)

A sparse, glabrous shrublet, up to 2 m high, with 1 or a few erect, terete branches, often growing in dense stands. Leaves with 5–8 apical teeth producing

pseudobulbils in their axils, greyish green with darker spots. *Flowers pale orange to deep magenta; June to July.* Old gardens in bushland. Native to Madagascar. *Stalmans 1314.*

W S C N E

Cotyledon L. (s. Afr.: 9 spp.)

3164000

Toelken. 1985. F.S.A. 14: 3–17.

barbeyi Schweinf. ex Baker

(= *C. wickensii* Schönland,
= *C. wickensii* Schönland var. *glandulosa* Poelln.)

Shrub, up to 2 m high. Leaves oblanceolate to linear, glabrous to ± glandular-pubescent. Flowers pendulous. Corolla tube bulging to almost saccate between calyx lobes. Squamulae obpyramidal. *Flowers orange to deep red; March to August.* Bushveld, rocky outcrops. *Codd 7051.*

W S C N E

orbiculata L. var. **oblonga** (Haw.) DC.(= *C. oblonga* Haw.)

Robust shrublets, up to 0.8 m high. Branches decumbent. Leaves obovate to oblanceolate, closely packed, green to glaucous. Peduncle with 1(2) pairs of bracts. Corolla tube cylindrical, 18–30 mm long. *Flowers red to pinkish orange; March to December.* Rocky slopes. *Smith 6023.*

W S C N E

Crassula L. (s. Afr.: 152 spp.)

3168000

Toelken. 1985. F.S.A. 14: 75–229.

acinaciformis Schinz(= *C. inaequalis* Schönland)

Perennial or biennial shrublet, up to 1.3 m high, with a single rosette. Leaves narrowly triangular to lanceolate, marginal teeth with broad base. Inflorescence a flat-topped thyrse with numerous pedicellate flowers in dichasia. *Flowers pale yellow; December to April.* Grassy (often rocky) slopes. *Devenish 555.*

W S C N E

alba Forssk. var. alba

(= *C. milleriana* Burtt Davy,
= *C. stewartiae* Burtt Davy)

Perennial or biennial shrublet, up to 500 mm tall, with 1 rosette, leaf pairs spirally arranged. Leaves lanceolate to linear-triangular, 60–150(–170) × 5–15 mm, glabrous. Petals 4.5–5.0–6.0 mm long. *Flowers deep red or white, tinged pink; January to May.* Gentle slopes in grassland. *Mohle 511.*

W S C N E

alba Forssk. var. pallida Toelken

Perennial herb, up to 200 mm tall. Leaf surface glabrous. Sepals with marginal cilia; calyx lobes 1–2 mm long, acute and usually with marginal teeth. Corolla 2–3(–4) mm long, with lobes spreading or slightly recurved, usually papillose. *Flowers cream to pale yellow; March to April.* Shallow soil on ledges above rock faces. *Forrester & Goyer 213.*

W S C N E

alba Forssk. var. parvisepala (Schönland) Toelken(= *C. rubicunda* Harv. var. *parvisepala* (Schönland) Schönland)

Perennial or biennial shrublet, up to 500 mm tall. Stems hispid with white hairs. Leaves lanceolate to linear-triangular. Petals 2.0–3.5 mm long. Ovary with 8–10 ovules. *Flowers deep red; December to May.* Grassland, rocky outcrops. *Stalmans 493.*

W S C N E

capitella Thunb. subsp. nodulosa (Schönland) Toelken

(= *C. capitella* Thunb. subsp. *enantiophylla* (Baker f.) Toelken,
= *C. nodulosa* Schönland)

Perennial shrublet, up to 0.7 m high. Stems hairy. Leaves obovate, 20–50(–60) × 10–25(–35) mm. Bracts subtending part-inflorescences covered with hairs and marginal cilia. Squamulae truncate. *Flowers white; November to April.* Grassland, gravelly slopes. *Codd 6306.*

W S C N E

capitella Thunb. subsp. sessilicymula (Mogg) Toelken(= *C. sessilicymula* Mogg)

Perennial shrublet with an erect stem, up to 400 mm tall. Leaves lanceolate; cauline leaves ± 3 times longer than broad. Inflorescences usually branched from base. Squamulae oblong, emarginate. *Flowers white; December to February.* Bushveld. *Smuts & Gillett 2511.*

W S C N E

compacta Schönland

Perennial or annual herb, up to 200 mm tall, with 1 or 2 rosettes. Stems shortly tomentose. Leaves with dense row of marginal cilia (touching one another). Inflorescence a spike-like thyrse. *Flowers white or cream; July to November.* Grassland. *Codd 8061.*

W S C N E

cymbiformis Toelken

Perennial shrublet, up to 200 mm tall. Stems decumbent and without distinct basal leaf rosette at flowering stage, at least 5 mm in diameter. Leaves dorsiventrally compressed and distinctly cymbiform. *Flowers white.* Shallow soil on rocks. No specimens in PRE.

W S C N E

dependens Bolus

(= *C. harveyi* Britten & Baker f.,
= *C. laxa* Schönland)

Perennial herb with decumbent branches, up to 200 mm long. Young branches usually covered with erect hair-like papillae. Leaves linear-lanceolate, 5–15(–20) × 1–2(–3) mm. Corolla with lobes lanceolate-oblong, recurved. *Flowers white or cream.* On shallow soil or in rock crevices. No specimens in PRE.

W S C N E

expansa Dryand. subsp. fragilis (Baker) Toelken

(= *C. browniana* Burtt Davy,
= *C. thorncroftii* Burtt Davy)

Perennial shrublet with decumbent branches, up to 250 mm long. Leaves and sepals with spreading hairs. Hydathodes scattered over upper leaf surface. *Flowers white; July to June.* Ledges covered in a thin layer of soil, bush groups. *Codd 8431.*

W S C N E

inanis Thunb.

Hydrophytic perennial shrublet with branches up to 300 mm. Leaves lanceolate to ovate. Inflorescence with 5–10(–20) flowers in axils of leaves. Flowers star-shaped. Petals 1–2 mm long. *Flowers white to pink; October to January.* Vleis, streams, rivers. *Toelken 1121.*

W S C N E

lanceolata (Eckl. & Zeyh.) Endl. ex Walp. subsp.**lanceolata**

(= *C. filamentosa* Schönland,
= *C. lanceolata* (Eckl. & Zeyh.) Endl. ex Walp.)

Perennial shrublet, up to 100 mm tall, often mat-forming with branches usually filiform. Leaves ± acute but not awned, all ± equal in length. *Flowers white; December to May.* Sheltered rock crevices. *Codd 3970.*

W S C N E

lanceolata (Eckl. & Zeyh.) Endl. ex Walp. subsp. denticulata (Brenan) Toelken

(= *C. schimperii* Fisch. & C.A. Mey. var. *lanceolata* (Eckl. & Zeyh.) Toelken p.p.)

Perennial shrublet, up to 100 mm tall. Main root divided and if fleshy then continued into fleshy, perennial

stems. Leaves with sharp terminal awn and lower ones distinctly longer than upper ones. *Flowers pale yellowish green; March to April*. On rock ledges, rock crevices. *Sheepers 1127*.

W S C N E

lanceolata (Eckl. & Zeyh.) Endl. ex Walp. subsp. **transvaalensis** (Kuntze) Toelken

(= *C. transvaalensis* (Kuntze) K. Schum.)

Perennial shrublet, up to 150 mm tall. Main root tuberous (carrot-like) from which new branches are produced annually. Leaves with sharp terminal awn and lower ones distinctly longer than upper ones. *Flowers white or yellow; December to April*. Bushveld, grassland and mopani veld. *Schlieben 9408*.

W S C N E

natans Thunb. var. **natans**

(= *Helophyllum fluitans* Eckl. & Zeyh.)

Plants with decumbent or floating stems 1–3(–5) mm in diameter. Leaves distinctly flat on upper surface, obovate to oblanceolate. *Flowers white to pinkish mauve; July to June*. Moist depressions, standing water. *Kings 1900*.

W S C N E

pellucida L. subsp. **alsinoides** (Hook. f.) Toelken

(= *C. alsinoides* Hook. f.)

Succulent perennial herb with decumbent to prostrate branches. Internodes and pedicels hairy. Leaves cuneate; leaf sheath with marginal cilia. *Flowers solitary at apex and in axils of leaves; white; October to May*. Forest, moist shaded places. *Killick & Strey 2419*.

W S C N E

pellucida L. subsp. **brachypetala** (Drège ex Harv.)

Toelken

(= *C. diabolica* N.E. Br.,

= *C. lineolata* sensu Schönland non Dryand.)

Succulent perennial herb with decumbent branches. Internodes and pedicels hairy. Leaves cuneate; leaf sheath with marginal cilia. *Flowers in terminal clusters; white; January to April*. Grassland, shady, moist places amongst rocks. *Devenish 591*.

W S C N E

peploides Harv.

(= *C. galpinii* Schönland)

Succulent perennial herb, with several terminal rosettes. Leaves linear-lanceolate, subulate and sessile. Inflorescences terminal on axillary branches. Flowers star-shaped. *Flowers white, tinged red; October*. Moist shallow soil on rocks. *Wilms 6473*.

W S C N E

perfoliata L. var. **heterotricha** (Schinz) Toelken

(= *C. heterotricha* Schinz)

Succulent perennial herb, up to 400 mm tall. Leaves dorsiventrally or laterally compressed and densely covered with rounded, erect papillae, lanceolate to oblong. Inflorescence a rounded flat-topped thyse. *Flowers*

white; April to July. Crevices on rocks or ledges. *Schlieben 10639*.

W S C N E

sarcocaulis Eckl. & Zeyh. subsp. **sarcocaulis**

(= *C. parvisepala* Schönland,

= *C. sarcocaulis* Eckl. & Zeyh. var. *scaberula* Harv.)

Succulent shrublet, up to 0.6 m high, usually moderately branched. Leaves elliptic, broadest at ± middle, 5–30 × 2–8 mm. Squamae obpyramidal. *Flowers white; July to June*. Mountainsides, border of scrub or forest communities. *Sheepers 950*.

W S C N E

sarcocaulis Eckl. & Zeyh. subsp. **rupicola** Toelken

Succulent shrublet with erect and spreading branches, up to 400 mm tall. Stems carnose, 5–30 mm in diameter. Leaves linear-lanceolate, 8–20 mm long. Petals recurving at apex. Squamae obpyramidal. *Flowers white; January to February*. Sheltered corners between boulders, rock crevices. *Galpin 10027*.

W S C N E

setulosa Harv. var. **setulosa**

Succulent perennial herb, up to 200 mm tall. Leaves rosulate, marginal cilia persistent and spreading. Inflorescence a round-topped thyse, often much-branched. Sepals with row of marginal cilia. *Flowers white; January to April*. Sheltered areas, usually associated with rocks or rock faces. *Wasserfall 897*.

W S C N E

setulosa Harv. var. **deminuta** (Diels) Toelken

(= *C. deminuta* Diels)

Succulent perennial herb, up to 80 mm tall, with distinct rosettes. Leaves with marginal cilia. Inflorescence spike-like, with 2 or 3 nodes producing almost sessile part-inflorescences. *Flowers white; August to September*. Moist places between rocks. *Thompson sub PRE 55217*.

W S C N E

setulosa Harv. var. **jenkinsii** Schönland

Succulent perennial herb, with erect leaves usually irregularly arranged to form untidy cushions. Inflorescence a terminal cyme with 1–3(–5) flowers. Petals tuberculate, with pointed dorsal appendage, 3.0–4.5 mm long. Sheltered rock crevices. *Jenkins sub TRV 10369*.

W S C N E

setulosa Harv. var. **longiciliata** Toelken

Perennial shrublet with branches up to 150 mm long. Branches woody. Leaves clustered and clasping around stems, marginal cilia prominent, cilia up to 1.5 mm long. *Flowers white; March*. Moist places, shallow soil in rock crevices. *Galpin 13622*.

W S C N E

swaziensis Schönland

(= *C. argyrophylla* Diels ex Schönland & Baker f. var. *swaziensis* (Schönland) Schönland)

Perennial herb, usually with short, erect or decumbent branches, up to 250 mm long. Branches with a terminal rosette of leaves. Leaves obovate, dorsiventrally compressed, covered with spreading hairs. *Flowers white to cream; March to August*. Rock crevices. *Esterhuysen 21508*.

W S C N E

tuberella Toelken

Perennial with fastigiate, erect branches, up to 150 mm long. Underground rhizome with small side branches terminating in tubers up to 3 mm in diameter. Leaves linear, 5–15 × 1,0–1,5 mm. Inflorescence with 1(–3) flowers per leaf axil owing to sympodial growth. *Flowers white*. Marshy areas or shallow vleis. No specimens in PRE.

W S C N E

vaginata Eckl. & Zeyh. subsp. **vaginata**

(= *C. drakensbergensis* Schönland,
= *C. retrorsa* Hutch.)

Perennial herb up to 500 mm tall when flowering, usually with a single rosette. Leaf sheath on lower part of erect branches (5–)8–15 mm long. Leaves 5–250 (–350) × 3–20(–35) mm, lanceolate to linear-triangular. Grassland. *Van der Schijff 2997*.

W S C N E

Kalanchoe *Adans.* (s. Afr.: 13 spp.) 3166000

Toelken, 1985. F.S.A. 14: 61–71.

alticola Compton

Shrublet with flaccid, decumbent, terete branches, up to 450 mm tall. Leaves oblanceolate to obovate, sessile, with pale horny margin. Inflorescence a round-topped thyrse. Corolla tube elongate-ampullaceous. *Flowers yellow to orange; June to July*. Between granite rocks, shallow, peaty soil. *Van der Merwe sub PRE 32782*.

W S C N E

brachyloba Welw. ex Britten

(= *K. multiflora* Schinz,
= *K. pyramidalis* Schönland)

Rosettes usually developing only 1 erect, terete stem, up to 2 m high. Leaves oblong-elliptic, margin with blunt teeth and/or lobes, folded lengthwise. Inflorescence a flat-topped thyrse. Corolla tube pyramidal. *Flowers yellowish green; April to May*. Bushveld, grassland, rocky slopes. *Van Graan & Hardy 577*.

W S C N E

crundallii I. Verd.

Sparse shrublet with erect or decumbent, terete branches. Leaf blade with a ± cuneate base, margin entire, petiolate.

Inflorescence an elongate thyrse. *Flowers deep yellow; July*. Forest. *Crundall sub PRE 53526*.

W S C N E

lanceolata (Forssk.) Pers.

(= *K. glandulosa* Hochst. ex A. Rich.,
= *K. pentheri* Schltr.)

Rosette usually developing only 1 erect stem, up to 1,5 m high. Stem sometimes quadrangular near base. Leaves sessile to subpetiolate with winged margins at base, dentate, crenate to shallowly lobed. Inflorescence hairy. *Flowers yellowish green; April to July*. Rocky outcrops. *Hardy 4296*.

W S C N E

longiflora Schltr. ex J.M. Wood

Sparse shrublet with decumbent branches, up to 400 mm long. Stems square in section. long. Leaves dentate, grey-green with thick bloom. Inflorescence a rounded thyrse. Corolla tube 11–14 mm. *Flowers yellow to orange; April to July*. Rocky outcrops. *Zambatis 1033*.

W S C N E

luciae Raym.-Hamet subsp. **luciae**

(= *K. albiflora* Forbes)

Glabrous plant, with rosette developing 1 to several branches, up to 2 m high. Leaves obovate to orbicular. Calyx lobes 2,5–4,0 mm long. Squamae usually square to transversely oblong. *Flowers pale yellowish green; April to September*. Woodland, top of hills and ridges. *Galpin 1353*.

W S C N E

luciae Raym.-Hamet subsp. **montana** (Compton)

Toelken

Hairy plant, with rosette developing 1 to several branches, up to 1 m high. Calyx lobes 5–7 mm long. Leaves narrowly oblanceolate. Squamae oblong. *Flowers pale yellowish green; April to July*. Grassland, northern slopes. *Kluge 1300*.

W S C N E

paniculata Harv.

(= *K. oblongiflora* Harv.)

Rosettes usually developing only 1 erect stem, up to 1,2 m high. Leaves petiolate, margin entire, base ± cuneate. Inflorescence a flat-topped thyrse. *Flowers yellowish green and deep yellow; July to June*. Rocky outcrops. *Smith 2841*.

W S C N E

rotundifolia (Haw.) Haw.

(= *K. luebbertiana* Engl.)

Sparsely branched shrublet with erect, terete branches, up to 1,2 m high. Calyx lobes 0,5–1,5(–2,0) mm long. Leaves with cuneate base, sinuate, margin crenate, dentate or lobed, blue-green. Inflorescence a sparse rounded thyrse. *Flowers orange to deep red; July to June*. Bushveld, shade or half-shade. *Theron 1469*.

W S C N E

sexangularis N.E. Br.

(= *K. rogersii* Raym.-Hamet,
= *K. rubinea* Toelken)

Sparse shrublet with few erect or decumbent branches, up to 1 m high. Stems terete or irregularly ridged. Leaves lobed, with obtuse teeth, folded lengthwise, recurved, green to deep ruby-red. Corolla tube 7–10 mm long. *Flowers yellowish green and yellow; August to November.* Rocky hillsides. *Codd 6038.*

W	S	C	N	E
---	---	---	---	---

thyrsiflora Harv.

Rosettes usually developing only 1 erect stem, up to 1,5 m high. Leaves sessile, obovate to oblanceolate-oblong, greyish green with red margins. Inflorescence an elongate thyrs. Corolla tube 12–16(–20) mm long. *Flowers grey-green and deep yellow; May to June.* Bushveld, rocky outcrops, near top of hills. *Behr 516.*

W	S	C	N	E
---	---	---	---	---

CUCURBITACEAE

Herbs, often covered with rough hairs, with trailing stems, often climbing by means of spirally coiled tendrils; sap watery. Leaves alternate, usually palmately veined, without stipules. Flowers regular, unisexual, axillary. Petals 5, free or united, often yellow or orange. Stamens basically 5, with anthers variously cohering, often curved or flexuous. Ovary inferior, unilocular or sometimes 3-locular; style simple or divided; stigmas large and fleshy, usually 3. Fruit a large berry, with a hard or leathery wall, and sometimes spines or warts.

Key after Dyer, Gen. 1: 629–630 (1975).

- 1a Receptacle tube relatively long in both male and female flowers; fruit terete, ribbed or trigonous; stamens 3, with one 1-thecous and others 2-thecous 2
- 1b Receptacle tube short, at least in female flowers, or small and campanulate 4
- 2a Monoecious, scabrid herbs; flowers small; tendrils simple; petioles usually with sessile, stipuliform, leafy bracts at base; male and female flowers in same axil; male flowers in racemes *Ctenolepis*
- 2b Monoecious or dioecious herbs, sometimes villous; tendrils unequally bifid or simple, rarely 0 3
- 3a Style long, linear; stigma 3-lobed, dilated; fruit fleshy, few-seeded *Trochomeria*
- 3b Style thick, fleshy; stigma 3-lobed, fleshy; fruit fleshy, many-seeded *Peponium*
- 4a Receptacle small and campanulate; ovules usually horizontal, rarely ascending 5
- 4b Receptacle tube short, at least in female flowers 11
- 5a Stamens arising from throat or base of receptacle tube; seeds usually compressed, sometimes ellipsoid 6
- 5b Stamens arising from mouth of tube; seeds pyriform or globose 10
- 6a Stamens 3, all 2-thecous *Zehneria*
- 6b Stamens 3, two 2-thecous, one 1-thecous 7
- 7a Anther thecae triplicate; thecae erect *Cucumis*
- 7b Anther thecae arcuate, straight or apically hooked 8
- 8a Fruit tuberculate; seeds with wide margins and depressed disc *Oreosyce*
- 8b Fruit not tuberculate; seeds convex, often lenticular; disc free; male flowers solitary or in small fascicles 9
- 9a Seeds turgid; female flowers fascicled *Mukia*
- 9b Seeds lenticular, compressed; female flowers solitary *Cucumella*
- 10a (5) Fruit indehiscent or dehiscent by a longitudinal slit or valve *Kedrostis*
- 10b Fruit dehiscent by an operculum *Corallocarpus*
- 11a (4) Anther hairs with multicellular apices; anthers usually 3, with two 2-thecous and one 1-thecous *Momordica*
- 11b Anther hairs with 1- or 2-celled apices 12
- 12a Fruit fleshy, spiny or warty; tendrils modified, spine-like or absent *Acanthosicyos*
- 12b Fruit fleshy, smooth or ribbed; tendrils simple or bifid; male flowers usually racemose; anthers free or, if cohering, connective broad 13
- 13a Male flowers usually solitary; fruit globose or ellipsoid, fleshy or dry *Citrullus*
- 13b Male flowers in racemes 14
- 14a Fruit the size of a large orange *Lagenaria*
- 14b Fruit a many-seeded berry *Coccinia*

Acanthosicyos Welw. ex Hook. f.

(s. Afr.: 2 spp.)

8590000

Jeffrey. 1978. F.Z. 4: 433–435.

naudinianus (Sond.) C. Jeffrey

(= *Citrullus naudinianus* (Sond.) Hook. f.,
= *Colocynthis naudinianus* (Sond.) Kuntze)

Prostrate perennial herb. Tendrils solitary, spiniform. Leaf lamina deeply palmately 5-lobed; lobes lanceolate to elliptic, deeply pinnately lobulate and often sinuate

at margins, central largest, scabrid and pilose. Male and female flowers solitary. Fruit 60–120 × 40–80 mm, ellipsoid or subglobose, pale yellow when mature, covered with prominent seta-tipped spines. *Flowers yellow to white; July and October to April.* Woodland, wooded grassland and grassland, on sandy soils. *Hanekom 2477.*

W S C N E

Citrullus Eckl. & Zeyh. (s. Afr.:

3 spp.)

8598000

Jeffrey. 1978. F.Z. 4: 435–437.

lanatus (Thunb.) Matsum. & Nakai

(= *C. vulgaris* Eckl. & Zeyh.,

= *Colocynthis citrullus* (L.) Kuntze)

Prostrate or scandent annual herb. Tendrils 2- or 3-fid. Leaf lamina deeply palmately 3–5-lobed; lobes elliptic in outline, shallowly to deeply pinnately lobulate, subentire or obscurely sinuate-denticulate. Male and female flowers solitary. Fruits 15–200 mm in diameter, subglobose, greenish mottled with darker green. *Flowers yellow; October to May.* Grassland and bushland, often along watercourses. *Botha C4.*

W S C N E

Coccinia Wight & Arn. (s. Afr.: 7 spp.) 8628000

Meeuse. 1962. Bothalia 8: 95–106.

Jeffrey. 1978. F.Z. 4: 442–451.

adoensis (A. Rich.) Cogn.

(= *C. pubescens* (Sond.) Eyles,

= *Cephalandra pubescens* Sond.)

Prostrate or scandent perennial herb. Tendrils simple. Leaves petiolate, petioles sparsely to densely hispid with rather slender, recurved, straight or usually adpressed-ascending hairs, lamina ± setulose or hispid beneath, at least on veins. Corolla lobes 10–30 mm, obovate, apiculate. Fruits apically ± rostrate, acute. *Flowers pale creamy yellow, salmon-pink or orange, veined with green, brown or purple; September to March.* Woodland, wooded grassland and grassland. *Gerstner 5850.*

W S C N E

palmata (Sond.) Cogn.

(= *Cephalandra palmata* E. Mey. ex Sond.)

Climbing perennial herb. Tendrils bifid. Leaves petiolate, glabrous. Corolla lobes 10–20 mm long. Fruit not rostrate, oblong-fusiform to narrowly ellipsoid, acute. *Flowers pale yellow; November to May.* Forests, thickets and forest margins. *Van der Schijff 5531.*

W S C N E

rehmannii Cogn.

(= *C. ovifera* Dinter & Gilg,

= *C. rehmannii* Cogn. var. *littoralis* A. Meeuse)

Prostrate or scandent perennial herb. Tendrils simple. Leaves distinctly petiolate, petioles sparsely to densely

setulose or spiculate with rather stout straight spreading hairs, lamina sparsely setulose on veins beneath. Corolla lobes 10–30 mm long, obovate, apiculate. Fruit not rostrate. *Flowers whitish cream to pale yellow, green-veined; July to June.* Wooded grassland, woodland. *Meeuse 9469.*

W S C N E

sessilifolia (Sond.) Cogn.

(= *C. schinzii* Cogn.,

= *Cephalandra sessilifolia* Sond.)

Prostrate or scandent perennial herb. Tendrils simple. Leaves sessile, glabrous. Corolla lobes 20–30 mm long. Fruit often shortly rostrate. *Flowers pale yellow, sometimes with pinkish tinge, green-veined; September to May.* Wooded grassland. *Codd 2239.*

W S C N E

variifolia A. Meeuse

Climbing perennial herb. Tendrils simple. Leaves distinctly petiolate, glabrous or nearly so. Lamina almost invariably with a few black glands near base on lower surface. Male flowers racemose. Corolla lobes 18–22 mm long. Fruit not rostrate. *Flowers pale buff yellow; November to February.* Forest, riverine vegetation or wooded rocky ridges. *Acocks 13903.*

W S C N E

Corallocarpus Hook. f. (s. Afr.: 7 spp.) 8569000

Jeffrey. 1975. Kew Bull. 30: 485–491.

Jeffrey. 1978. F.Z. 4: 487–491.

bainesii (Hook. f.) A. Meeuse

Prostrate or scandent herb. Stems glabrous. Leaves palmately (3–)5-lobed, uniformly finely, rather densely puberulous or hispid above and beneath; petioles glabrous or minutely pubescent, not spiculate. Fruits 1–15 in each cluster, glabrous, rounded. *Flowers yellowish; October.* Deciduous woodland and bushland, usually on sandy soils. *Meeuse & Strey 10460.*

W S C N E

triangularis Cogn.

(= *C. sphaerocarpus* Cogn. var. *scaberrimus* Cogn.,

= *C. sphaerocarpus* Cogn. var. *subhastatus* Cogn.)

Prostrate or scandent herb. Stems puberulous and also spiculate on ridges. Petioles retrorsely puberulous. Fruits puberulous, 1–4 in each cluster, often more than 1, usually subsessile, not or only shortly rostrate. *Flowers pale yellow to white; November to December and in May.* Woodland, wooded grassland, thicket and bushland. *Obermeyer, Schweickerd & Verdoorn 30.*

W S C N E

Ctenolepis Hook. f. (s. Afr.: 1 sp.) 8564010

Jeffrey. 1978. F.Z. 4: 460–462.

cerasiformis (Stocks) Hook. f.

(= *Blastania cerasiformis* (Stocks) A. Meeuse,
= *Zehneria cerasiformis* Stocks)

Scandent herb. Tendrils simple. Leaf lamina broadly ovate in outline, cordate, asperulous and scabrid-punctate above, asperulous underneath and scabrid-strigose on main veins, deeply palmately 3–5-lobed, petiolate; lobes elliptic, coarsely sinuate or sinuate-serrate or denticulate. Stipuloid bracts suborbicular, fimbriate-ciliate. Male flowers 3–20, racemose, pedunculate. Female flowers solitary, co-axillary with male flowers. Fruit subglobose, red, smooth, 10–15 mm in diameter. *Flowers yellowish; February to March*. River margins in woodland and wooded grassland. *Retief 375*.

W	S	C	N	E
---	---	---	---	---

Cucumella Chiov. (s. Afr.: 3 spp.) 8599010

Meeuse. 1962. Bothalia 8: 17–18.
Jeffrey. 1962. Kew Bull. 15: 350.
Jeffrey. 1978. F.Z. 4: 472–475.

bryoniifolia (Merxm.) C. Jeffrey

(= *Cucumis umbrosus* A. Meeuse & Strey,
= *Hymenosicyos bryoniifolius* Merxm.)

Prostrate or scandent annual herb. Fruit ellipsoid, 20–30 × 13–15 mm, rounded at apex, green with pale longitudinal stripes, glabrous or sparsely setulose. *Flowers yellow; January and April*. Woodland and grassland, usually on granite outcrops. *Strey 3298*.

W	S	C	N	E
---	---	---	---	---

cinerea (Cogn.) C. Jeffrey

(= *Melothria cinerea* (Cogn.) A. Meeuse,
= *Kedrostis cinerea* Cogn.)

Prostrate or climbing perennial herb. Fruit ovoid-oblong or subglobose-ovoid to somewhat obovoid, usually abruptly contracted into narrow rostrum, with ± 8 fine longitudinal ribs, glabrescent, orange when ripe, 13–19 mm long (with rostrum) and 8–12 mm in diameter. *Flowers light yellow; November to April*. Granite outcrops, sometimes quartzite or sandstone. *Onderstall 1125*.

W	S	C	N	E
---	---	---	---	---

Cucumis L. (s. Afr.: 14 spp.) 8599000

Meeuse. 1962. Bothalia 8: 59–82.
Jeffrey. 1975. Kew Bull. 30: 481–482.
Halliday & Jeffrey. 1978. F.Z. 4: 462–470.

africanus L.f.

(= *C. hookeri* Naudin)

Prostrate or scandent annual or perennial herb, monoecious (male and female flowers on the same plant). Tendrils solitary at each node. Corolla lobes up to 11 mm long. Fruits ellipsoid or oblong-ellipsoid, 32–90 mm long, striped pale greenish white and purplish brown; fruit stalk 20–45 mm long; spines on fruit rather stout, laterally compressed, 3–6 mm long. *Flowers bright yellow; November to May*. Bushland. *Crosby 143*.

W	S	C	N	E
---	---	---	---	---

anguria L.

(= *C. anguria* L. var. *longipes* (Hook. f.) A. Meeuse)

Prostrate or scandent annual herb. Tendrils solitary at each node. Stems and petioles patent-setulose. Corolla lobes up to 8 mm long. Fruit uniformly yellow when ripe, softly spiny, spines 3–11 mm long; fruit stalk 25–210 mm long, usually exceeding 60 mm, expanding upwards. *Flowers yellow; November to May*. Woodland and wooded grassland, often on Kalahari sand and on abandoned cultivated land. *Van der Schijff 1639*.

W	S	C	N	E
---	---	---	---	---

heptadactylus Naudin

Prostrate perennial herb, dioecious (male and female flowers on different plants). Tendrils solitary at each node. Corolla lobes up to 4 mm long. Fruits ovoid or ellipsoid, with dark longitudinal bands, 30–50 × 20–40 mm, covered with thick subcylindric callous-tipped and minutely setose-mucronate blunt spines. *Flowers pale yellow*. Grassland in deep sand. *Burt Davy 12996*.

W	S	C	N	E
---	---	---	---	---

hirsutus Sond.

(= *C. sonderi* Cogn.,
= *C. hirsutus* Sond. var. *dissectus* Cogn.)

Prostrate or scandent perennial herb, dioecious (male and female flowers on different plants). Tendrils solitary at each node. Fruit without apically setiferous spines or tubercles, smooth. Seeds ovate in outline, 6.5–9.0 × 4.9–6.3 × 2.1–3.2 mm. *Flowers white, cream, pale yellow or yellow; September to April*. Woodland, wooded grassland and grassland. *Codd 6218*.

W	S	C	N	E
---	---	---	---	---

humifructus Stent

Prostrate annual herb. Tendrils 2–8 at each node. Pedicel of ovary rapidly elongating and burying developing fruit. Fruit maturing underground, subglobose, pale greenish, yellow or whitish, rugose; fruit stalk 100–250 mm long. *Flowers yellow or pale yellow; January and April*. Woodland and grassland, on deep sand. *Nel 536*.

W	S	C	N	E
---	---	---	---	---

melo L.

(= *C. melo* L. var. *agrestis* Naudin,
= *C. melo* L. var. *cultus* Kurz)

Prostrate or scandent annual herb, monoecious (male and female flowers on the same plant). Tendrils solitary at each node. Fruit without apically setiferous spines or tubercles. Seeds elliptic in outline, 5–8 × 2.5–4.0 × 1.0–1.5 mm. *Flowers yellow or pale apricot-yellow; March to April*. River margins; also cultivated. *Codd 6634*.

W	S	C	N	E
---	---	---	---	---

metuliferus Naudin

Prostrate or scandent annual herb. Tendrils solitary at each node. Fruit bright red when ripe; rather sparsely covered with stout fleshy spines. Seeds fibrillose. *Flow-*

ers yellow or pale orange; January to April. Semi-evergreen forest, woodland, wooded grassland and grassland, also on abandoned cultivated land, often riverine. Louw 4209.

W S C N E

myriocarpus Naudin subsp. **myriocarpus**

(= *C. dissectifolius* Naudin,
= *C. merxmülleri* Suess.)

Prostrate or scandent annual herb, monoecious (male and female flowers on the same plant). Tendrils solitary at each node. Corolla lobes up to 10 mm long. Fruit globose to ellipsoid, 18–27 mm long, striped dark and light green or white or sometimes purplish brown, becoming rusty orange with less conspicuous striping when ripe; fruit stalk 45–68 mm long, slender; spines on fruit weak, terete, slender, 1.5–5.0 mm long, rather dense to dense. *Flowers pale yellow; September to June.* Grassland, wooded grassland and bushland, on sandy soils; also weed of cultivated ground. Meeuse 9124.

W S C N E

myriocarpus Naudin subsp. **leptodermis** (Schweick.)

C. Jeffrey & P. Halliday
(= *C. leptodermis* Schweick.)

Prostrate annual herb. As subsp. *myriocarpus*, but fruit subglobose, green, concolorous or with indistinct narrow paler longitudinal bands, pale yellow with or without indistinct banding when mature; spines up to 2 mm long, sparse, sometimes very short and/or very sparse. *Flowers yellow; February.* Sandy soil in open grassland. Speedy 3/13.

W S C N E

quintanilhae R. & A. Fern.

Prostrate or scandent probably annual herb, monoecious (male and female flowers on the same plant). Tendrils solitary at each node. Flowers large. Corolla lobes 13–35 mm long. Fruit 40 × 25 mm, ellipsoid, green becoming yellow when ripe, spiny, spines 9–12 mm long. *Flowers white or yellow, green-veined.* Bushland. No material in PRE.

W S C N? E

zeyheri Sond.

(= *C. africanus* L.f. var. *zeyheri* (Sond.) Burt Davy,
= *C. prophetarum* L. subsp. *zeyheri* (Sond.) C. Jeffrey)

Prostrate or scandent perennial herb. Tendrils solitary at each node. Stems and petioles retrorsely scabrid-setose. Corolla lobes up to 9 mm long. Fruit uniformly yellow when ripe, softly spiny, spines rather slender, 2–16 mm long; fruit stalk 19–51 mm long, not expanded upwards. *Flowers yellow; October to May.* Open woodland and grassland, also a weed of cultivated land. Hanekom 2005.

W S C N E

Kedrostis Medik. (s. Afr.: 8 spp.) 8568000

Meeuse. 1962. *Bothalia* 8: 24–38.
Jeffrey. 1978. *F.Z.* 4: 484–487.

africana (L.) Cogn.

(= *K. punctulata* (Sond.) Cogn.,
= *K. digitata* (Thunb.) Cogn.,
= *K. glauca* (Schrud.) Cogn.)

Glabrous to scabrid-punctulate, prostrate or climbing herb. Tendrils simple. Male peduncles slender, similar to pedicel. Fruit subglobose, often shortly and abruptly pointed, glabrous, 8–15 mm in diameter. Seeds ovoid-oblong or ovoid, 4.5–6.0 mm long. *Flowers yellowish green, whitish or cream-coloured; October to April.* Grassland, vleis, streambanks; also in disturbed places. Codd 9219.

W S C N E

capensis (Sond.) A. Meeuse

(= *Pisosperma capense* Sond.)

Prostrate herb. Tendrils reduced or short or wanting. Male peduncles stout, distinct from pedicels which are more slender. Receptacle lobes of male flowers 1–2(–3) mm long, triangular or triangular-ovate. Fruit glabrous, 15–25(–30) mm long, subglobose to ovoid or oblong, shortly rostrate. *Flowers pale yellow or greenish yellow; October.* Grassland. Devenish 895.

W S C N E

crassirostrata Bremek.

Climbing perennial herb. Tendrils simple. Male peduncles stout. Receptacle lobes of male and female flowers ± 2–3 mm long, triangular-subulate or lanceolate. Fruit ovoid-lageniform or obpyriform, rounded at base, rostrate with conical, acute or obtuse rostrum, glabrous, red. Seeds broadly ellipsoid. *Flowers greenish; January to February.* Dry sandy areas. Meeuse 9605.

W S C N E

foetidissima (Jacq.) Cogn.

(= *K. foetidissima* (Jacq.) Cogn. subsp. *obtusiloba* (Sond.) A. Meeuse,
= *Trichosanthes foetidissima* Jacq.)

Scandent or prostrate herb or climber, viscid-glandular and foetid when crushed. Tendrils simple. Male peduncles slender, similar to pedicels. Fruits pilose, ovoid-rostrate to subglobose, 9–13 × 5–7 mm. Seeds asymmetrically ovoid, 4.3–5.1 mm long. *Flowers cream, yellow or greenish yellow; December to May.* Woodland and grassland, often on river margins and termite mounds. Meeuse 9446.

W S C N E

hirtella (Naudin) Cogn.

(= *K. natalensis* (Hook. f.) A. Meeuse)

Prostrate or scandent herb. Tendrils bifid, rarely simple. Male peduncles stout, distinct from pedicels which are much more slender. Receptacle lobes of male flowers 4–9 mm long, narrowly triangular to lanceolate, of female flowers 4.0–4.5 mm long. Fruit glabrous, 58–65 mm long, cylindric-fusiform, rounded at base, rostrate, green mottled pale green or white when immature, becoming red when ripe. Seeds subglobose. *Flowers yellow or greenish yellow; November to April.* Woodland and bushland. Story 5403.

W S C N E

leloja (J.F. Gmel.) C. Jeffrey(= *Turia leloja* J.F. Gmel.)

Scandent herb. Tendrils simple, rarely bifid. Male peduncles stout, distinct from pedicels which are much more slender. Receptacle lobes of male flowers 0.8–1.3 mm long, triangular, of female flowers 1 mm long. Fruit glabrous, 45–65 mm long, fusiform, attenuate at base, long rostrate, uniformly green when immature, becoming red when ripe. Seeds subglobose. *Flowers cream, yellow or greenish yellow; December.* Forest and woodland. *Van der Schijff 4096.*

W S C N E

limpompensis C. Jeffrey

Prostrate or scandent herb, crispate-pubescent, not viscid-glandular. Tendrils simple. Male peduncles slender, similar to pedicels. Fruits ovoid-rostrate, 16–20 × 7–10 mm, shortly and densely hispid. Seeds asymmetrically ovoid, 5.5–5.8 mm long. *Flowers yellow-green.* Bushland. *Gerstner 6072.*

W S C N E

Lagenaria Ser. (s. Afr.: 2 spp.)

8610000

Jeffrey. 1978. F.Z. 4: 437–440.

siceraria (Molina) Standl.(= *L. vulgaris* Ser.,
= *Cucurbita siceraria* Molina)

Prostrate or scandent annual herb, monoecious (male and female flowers on the same plant). Glands at apex of petiole rather obscure, ± recurved, inserted at base of leaf lamina. Male flowers solitary. *Flowers white; April to June.* Cultivated for fruits; riverine. *Codd 4283.*

W S C N E

sphaerica (Sond.) Naudin(= *L. mascarena* Naudin,
= *Luffa sphaerica* Sond.)

Prostrate or scandent perennial herb, usually dioecious (male and female flowers on different plants). Glands at apex of petiole prominent, patent, inserted just below base of leaf lamina. Male flowers usually racemose. *Flowers white with green veins; December to May.* Riverine forest and thicket. *Codd 6829.*

W S C N E

Momordica L. (s. Afr.: 9 spp.)

8591000

Jeffrey & Mann. 1978. F.Z. 4: 419–429.

balsamina L.(= *M. involucrata* E. Mey. ex Sond.,
= *M. schinzii* Cogn.)

Prostrate or scandent herb. Tendrils simple, unbranched. Stems and petioles concolorous, uniformly green. Leaf lamina deeply palmately 3–7-lobed usually to the middle or beyond, lobes narrowed towards base, rhombic, elliptic or obovate in outline, ± sinuate-lobu-

late. Male flowers solitary, pedicel 2–5 mm long, peduncle free from petiole of subtending leaf. Ovary and fruit with longitudinal rows of small tubercles, otherwise smooth; fruit stalk 6–17 mm long. *Flowers pale yellow, cream or white, green-veined, dark at base; July to June.* Woodland, wooded grassland and riverine fringes, on sandy soils. *Onderstall 1110.*

W S C N E

boivinii Baill.(= *Raphanocarpus boivinii* (Baill.) Chiov.,
= *R. tuberosus* Dinter)

Prostrate or scandent herb. Tendrils simple, unbranched. Stems and petioles concolorous, uniformly green. Leaf lamina unlobed or usually shallowly 3–5-lobed or -angled; lobes ovate or triangular. Male flowers 1–8, subumbellate, peduncle free from petiole of subtending leaf. Fruit fusiform, 4–8 mm in diameter. *Flowers yellow to deep orange above, pale beneath, dark at base; July and November to February.* Woodland, wooded grassland and riverine fringes, mostly on sandy soils. *Van der Schijff 3604.*

W S C N E

cardiospermoides Klotzsch(= *M. clematidea* Sond.)

Prostrate or scandent herb. Tendrils simple or bifid. Leaves compound, with 9–21 leaflets. Male flowers solitary. Fruit ellipsoid, smooth, 50–130 × 25–70 mm. *Flowers pale yellow to orange, dark at base; November to April.* Woodland and wooded grassland. *Codd 6505.*

W S C N E

charantia L.*

Prostrate or scandent herb. Tendrils simple. Stems and petioles concolorous, uniformly green. Leaf lamina deeply palmately 3–7-lobed usually to middle or beyond; lobes narrowed towards base, rhombic, elliptic or obovate in outline, ± sinuate-lobulate. Male flowers solitary, pedicel 20–95 mm long; peduncle free from petiole of subtending leaf. Ovary and fruit with longitudinal rows of larger tubercles and with smaller interstitial tubercles; fruit stalk 34–122 mm long. *Flowers pale to deep yellow; January to March.* Riverine fringes, old cultivations. Native to India. *Onderstall 1422.*

W S C N E

foetida Schumach.(= *M. cordifolia* E. Mey. ex Sond.)

Prostrate or scandent herb. Tendrils simple or bifid. Stems and petioles spotted with numerous small darker green marks. Leaf lamina ovate or ovate-triangular in outline, broadly and deeply cordate, minutely denticulate to very strongly sinuate-denticulate, unlobed. Male flowers 1–8 (opening singly) in pedunculate subumbelliform inflorescences. Fruit 35–75 × 25–50 mm, ovoid to ellipsoid, softly spiny. *Flowers pale yellow to orange, deeper orange to black at base; October to May.* Woodland, wooded grassland and grassland, often in riverine fringes. *Taussig 25.*

W S C N E

repens Bremek.(= *M. marlothii* Harms)

Prostrate or scandent herb. Tendrils bifid. Stems and petioles concolorous, uniformly green. Leaf lamina and bracts deeply palmately 7(or more)-lobate; lobes subequal and markedly lobulate. Male flowers 3–5 in pedunculate, subumbelliform inflorescences, opening singly. Fruit 50–60 × 47 mm, ellipsoid or subglobose, rostrate, 10-ribbed, muricate. *Flowers yellow, dark-veined, dark at base; October to January.* Bushland on sandy soil. *Meeuse & Strey 10450.*

W S C N E

Mukia Arn. (s. Afr.: 1 sp.)

8562000

Jeffrey. 1978. F.Z. 4: 475–477.

maderaspatana (L.) M. Roem.(= *M. scabrella* (L.) Am.,= *Melothria maderaspatana* (L.) Cogn.)

Prostrate or scandent herb. Tendrils simple. Leaf lamina narrowly to broadly ovate or triangular in outline, cordate, hastate or sagittate, hispid or scabrid-setulose, unlobed or palmately 3(5)-lobed; lobes triangular, central largest, petiolate. Male flowers in sessile fascicles, pedicels 1–3 mm long. Female flowers 5–10 in each sessile fascicle. Fruits 2–8 in axillary clusters, globose, 6–11 mm in diameter. *Flowers yellow; December to April.* Flood-plain and valley grasslands, riverine margins and damper places in woodland and wooded grassland. *Codd 6024.*

W S C N E

Oreosyce Hook. f. (s. Afr.: 1 sp.)

8560000

Jeffrey. 1978. F.Z. 4: 470–472.

africana Hook. f.(= *O. subsericea* (Hook. f.) A. Meeuse)

Prostrate or scandent herb. Tendrils simple. Leaves triangular, subhastate, ovate, cordate, densely hispid-setulose, unlobed or palmately 3–5-lobed, lobes triangular, central largest, petiolate. Male flowers in fascicles of 3–6, pedicels 3–15 mm long. Female flowers solitary, pedicels 3–10 mm long. Fruit ovoid to ellipsoid, 15–27 × 13–21 mm, shortly rostrate. *Flowers pale yellow to pale orange-yellow.* Forest margins. *Blenheim & Young sub PRE 42232.*

W S C N E

Peponium Engl. (s. Afr.: 4 spp.)

8612000

Meeuse. 1962. Bothalia 8: 91–95.

Jeffrey. 1979. F.Z. 4: 492–493.

caledonicum (Sond.) Engl.(= *Luffa caledonica* Sond.,= *Peponia caledonica* (Sond.) Cogn.)

Prostrate perennial herb. Leaves glabrescent, pubescence persistent only on main veins beneath, herba-

ceous, cordate-orbicular in outline, 5-partite; lobes oblong or obovate, contracted at base. Male flowers usually racemose on short individual pedicels. *Flowers yellow to pale yellow; November to April.* Grassy slopes and rocky outcrops. *Meeuse 9260.*

W S C N E

cf. **chirindense** (Baker f.) Cogn.

Scandent (rarely prostrate) perennial herb. Tendrils stout. Leaves glabrous or almost so, even on veins beneath, lamina thick, coriaceous; lobes triangular or ovate-triangular, not lobulate. Male flowers racemose, 7–12-flowered. *Flowers yellow or pale yellow; June.* Rain-forest, especially on margins and in clearings; sometimes moist grassland. *Smuts 2075.*

W S C N E

cf. **kilimandscharicum** (Cogn.) Engl.

Scandent herb, persistently ± hairy. Male flowers usually racemose, common peduncle longer than 120 mm. *Flowers yellow; March.* Forest edges or rocky outcrops. *Gerstner 5902.*

W S C N E

mackenii (Naudin) Engl.(= *Peponia mackenii* Naudin)

Climbing (rarely prostrate) perennial herb. Leaves pubescent, especially on main veins below, lamina palmatilobed, lobes triangular. Male flowers usually solitary, on long pedicels. *Flowers white to yellow; December and March.* Forest margin. *Van der Schijff 6404.*

W S C N E

Trochomeria Hook. f. (s. Afr.: 4 spp.)

8608000

Jeffrey. 1978. F.Z. 4: 456–459.

debilis (Sond.) Hook. f.(= *Zehneria debilis* Sond.,= *Z. wyleana* Sond.)

Prostrate or scandent perennial herb. Tendrils present. Stems glaucous, glabrous or sparsely pubescent. Leaves scabrid-setulose or scabrid-punctate above, otherwise glabrous, petiolate; stipuloid bracts present at base of at least some petioles, reniform or suborbicular, lacinate. Corolla lobes 5–13 mm long, not attenuate at apex. Seeds 7.5–9.0 mm long. *Flowers yellowish green; August to January.* Bushland and wooded grassland. *Codd 9395.*

W S C N E

hookeri Harv.(= *T. rotundata* Burtt Davy,= *Zehneria garcini* non (L.) Stocks)

Prostrate or scandent perennial herb. Tendrils present. Stems usually hispid. Leaves minutely and sparsely asperulous to shortly and densely hispid or pubescent on both surfaces, petiolate; stipuloid bracts present at base of petioles, reniform to circular, ciliate-lacinate. Corolla lobes 10–25 mm long. Seeds 10–12 mm long.

Flowers green or greenish yellow; October to February. Wooded grassland. Bruce 471.

W S C N E

macrocarpa (Sond.) Hook. f. subsp. **macrocarpa**

(= *T. nudiflora* Burt Davy,
= *Zehneria macrocarpa* Sond.)

Prostrate or scandent perennial herb. Tendrils present. Leaves petiolate; stipuloid bracts absent or present. Corolla lobes 20–60 mm long, markedly attenuate at apex. Flowers olive-green or dull greenish yellow, sometimes with brownish tinge towards apex; August to March. Woodland and wooded grassland. Codd & Kies 3500.

W S C N E

Zehneria Endl. (s. Afr.: 3 spp.) 8564000

Jeffrey. 1978. F.Z. 4: 477–483.

marlothii (Cogn.) R. & A. Fern.

(= *Melothria acutifolia* Cogn.,
= *M. marlothii* Cogn.)

Scandent herb, monoecious (male and female flowers on the same plant). Male flowers 2–15 in subum-

belliform pedunculate axillary clusters, rarely solitary. Female flowers solitary, co-axillary with male flowers. Stamens on long, hairy filaments. Fruit globose, red, 5–7 mm in diameter. Seeds 4, 2–4, 7 mm long. Flowers white, becoming yellow-green with age; January to May. Woodland, often on sandy soils. Meeuse 10541.

W S C N E

scabra (L.f.) Sond. subsp. **scabra**

(= *Melothria cordata* (Thunb.) Cogn.,
= *M. punctata* Cogn.)

Prostrate or scandent herb, dioecious (male and female flowers on different plants). Male flowers 3–60 or more in dense subumbelliform axillary clusters, co-axillary with a long-pedicellate solitary flower. Female flowers solitary or 2–10 or more in subumbelliform axillary clusters. Fruits globose or ellipsoid, 8–13 mm in diameter, rounded at apex, red. Flowers white becoming yellowish with age; November to July. Forest and river margins. Codd 9486.

W S C N E

DICHAPETALACEAE

Trees, shrubs or shrublets with rhizomes. Leaves alternate, with stipules. Flowers regular; disc often comprising 5 free glands opposite petals; short calyx tube present. Petals 4 or 5, mostly 2-lobed, free or united, arising from calyx tube. Stamens 5. Ovary superior, with 2 or 3 locules. Fruit a drupe.

Dichapetalum Thouars (s. Afr.: 2 spp.) 4283000

Breteler. 1978. Belmontia 9: 32.

cymosum (Hook.) Engl.

(= *D. bullockii* Hauman,
= *D. venenatum* Engl. & Gilg)

Low rhizomatous suffrutex. Stipules narrowly triangular to subulate, (2–)3–6(–7) mm long. Leaves usually

sessile, elliptic to obovate, up to 12 times as long as wide, 50–130 × 20–40 mm, nervation prominent. Inflorescence rather loose, distinctly branched. Petals and sepals narrowly oblong. Flowers white; September to December. Grassland. Smith 3363.

W S C N E

DIPSACACEAE

Herbs. Leaves opposite, mainly in basal rosette, without stipules. Inflorescence a dense, involucre head, outer flowers often enlarged. Flowers irregular, somewhat 2-lipped, with single cup-shaped involucre (epicalyx) below calyx or divided into 5–20 stellately spreading bristles. Petals 4 or 5, united. Stamens 4, free, arising from throat of corolla tube. Ovary inferior. Fruit dry and indehiscent, enclosed by epicalyx.

Key after Dyer, Gen. 1: 628 (1975) and Cannon & Cannon in F.Z. 7,1: 77 (1983).

Calyx without persistent bristles; involucre bracts in several rows *Cephalaria*
Calyx with persistent bristles; involucre bracts in 1 or 2 rows *Scabiosa*

Cephalaria Roem. & Schult. (s. Afr.:

14 spp.)

8541000

Compton. 1967. Jl S. Afr. Bot. 33,4: 298–299.

Napper. 1968. Kew Bull. 21: 463–470.

Cannon & Cannon. 1983. F.Z. 7,1: 78.

armerioides Szabó

Perennial herb, 0,5–0,7 m high. Stem leaves numerous and all alike, linear, up to 180 mm long, entire or lobed, glabrous. Heads globose. *Flowers white; November.* Rocky grassland, often near streams. *Acocks 20877.*

W S C N E

petiolata Compton

Perennial herb, up to 0,7 m high. Stem leaves few, with long slender petioles, up to 150 mm long, lamina lanceolate, entire or with few short marginal teeth, sparsely hairy on one or both surfaces. Stem bearing single capitulum, ± 30 mm in diameter. *Flowers white; February to March.* Rocky grassland, seepage areas or near streams. *Burgoyne 156.*

W S C N E

pungens Szabó

Perennial herb, up to 2 m high. Stem leaves few, upper ones smaller and usually more dissected than lower, lower leaves elliptic, usually entire, rarely lobed or crenate at base, glabrous or sparingly pilose, upper leaves narrower with much narrower divisions than lower. Involucel with entire or $\pm$ crenate membranous rim or limb with 4 shallow obtuse or 3-toothed lobes. *Flowers white, cream or yellow; January to April.* Upland grassland, streamsides and swampy places. *Devenish 541.*

W S C N E

zeyheriana Szabó

Perennial herb, up to 1 m high. Stem leaves few, upper ones smaller and usually more dissected than lower.

Lower leaves $\pm$ elliptic, toothed, rarely entire, lobed below, subtomentose or pilose to almost glabrous. Involucel 4-toothed, sometimes shortly so but lobes always acute. *Flowers white or cream; October to June.* Grassland, rocky outcrops or in seepage areas. *Pienaar 764.*

W S C N E

Scabiosa L. (s. Afr.: 9 spp.)

8546000

Moore. 1918. J. Bot., Lond. 56: 6.

Cannon & Cannon. 1983. F.Z. 7,1: 81–84.

columbaria L.(= *S. anthemifolia* Eckl. & Zeyh.,= *S. austro-africana* Heine)

Perennial herb, up to 1,5 m high. Leaves in basal rosette, ovate-lanceolate, obovate or lanceolate, simple, lyrate or pinnatifid, upper stem leaves 1- or 2-pinnatifid or -pinnatisect, segments linear to lanceolate, terminal segment larger than lateral. Capitula large, (20–)25–35(–40) mm in diameter. *Flowers mauve or white, or tube white and lip mauve; July to June.* Upland grasslands, mountainsides and open woodland. *Codd & De Winter 4931.*

W S C N E

transvaalensis S. Moore

Perennial herb, up to 500 mm tall. Leaves evenly scattered along stem, toothed, oblong-ob lanceolate to oblong-obovate, obtuse, sessile. Capitula ± 12 mm in diameter. *Flowers mauve or white-pinkish; December to April.* Grassland on hillsides. *Rogers 14361 (Tvl. Mus. 147381).*

W S C N E

DROSERACEAE

Small herbs, insectivorous, usually growing in moist places. Leaves usually in a basal rosette, covered with sticky glandular hairs. Flowers regular. Petals 5, free. Stamens 5, free. Ovary superior, with 1 locule. Fruit a capsule, enclosed in persistent calyx.

Drosera L. (s. Afr.: 20 spp.)

3136000

Obermeyer. 1970. F.S.A. 13: 189–201.

burkeana Planch.

Small herbs with tufted rosettes. Petioles ± 15 mm long. Inflorescences 50–200 mm long. Petals up to 8 mm long. *Flowers pink or white; September to February.* Vleis, streambanks. *Venter 1078.*

W S C N E

collinsiae N.E. Br. ex Burt Davy

Herb, forming a lax basal rosette. Leaves erect or spreading; petioles up to 50 mm long. Inflorescence up to 170 long. Petals up to 8 mm long. *Flowers purple or red; October to February.* Vleis, grassland. *Theron 2380.*

W S C N E

dielsiana Exell & J.R. Laundon

Small, hairy herb with compact, basal rosettes. Stipules laciniate, auriculate. Inflorescence 100–200 mm long.

Style arms entire, spoon-shaped. Seed ovoid. *Flowers pink, mauve, violet or white; December to April.* Mountain summits. *Leistner & Mauve 3226.*

W S C N E

indica L.

A slender, delicate, caulescent annual herb. Leaves linear, laxly arranged on stems. Inflorescence up to 150 mm long. *Flowers mauve; February to April.* Grassland, vleis. *Tinley 3059.*

W S C N E

madagascariensis DC.

(= *D. curvipes* Planch.,
= *D. madagascariensis* DC. var. *major* Burtt Davy)

Caulescent herb, half decumbent, stems occasionally suppressed. Stipules present, conspicuous. Leaves petio-

late, leaf blade distinct from petiole. Cyme simple, helicoid. Scapes sharply curved at base. *Flowers pink; December to February.* Grassland, vleis. *Germishuizen 870.*

W S C N E

natalensis Diels

Small herb with basal, rosulate leaves inserted close together on very short stem. Style arms bifid or trifid. Rosette lax, old leaves not long persistent, blade thin, sparsely covered with tentacles. *Flowers brown and pink; November to February.* Grassland, vleis. *Nicholas & Kondo 1896.*

W S C N E

EBENACEAE

Trees, shrubs. Leaves usually alternate, without stipules. Flowers unisexual, male and female on separate plants. Petals 3–8, united, often urn-shaped; lobes twisted. Stamens 3 to many; anthers longer than the short filaments. Ovary superior, borne on smooth or fringed disc. Fruit a pulpy or fibrous berry.

Key after Dyer, Gen. 1: 448 (1975).

Calyx not accrescent; ovary on fringed disc; fruits usually 1-seeded *Euclea*
Calyx usually accrescent; ovary on glabrous disc; fruits usually with 2 or more seeds *Diospyros*

Diospyros L. (s. Afr.: 21 spp.)

6406000

De Winter, 1963. F.S.A. 26: 54–80.
White, 1983. F.Z. 7, 1: 251–288.

austro-africana De Winter var. *microphylla* (Burch.)

De Winter

(= *Royena microphylla* Burch.)

Shrub, 0.6–3.0 m high. Leaves cuneate to obtuse at base; mature leaves not longer than 15 mm, with conspicuous, reticulate venation below. Flowers pentamerous, solitary. Calyx deeply divided. *Flowers pink or cream flushed with pink; September to October.* Rocky ridges and outcrops. *Devenish 1842.*

W S C N E

dichrophylla (Gand.) De Winter

(= *Royena dichrophylla* Gand.)

Shrub or tree, 0.6–3.5 m or up to 13 m high. Leaves cuneate to obtuse at base, narrowly obovate or oblanceolate, coriaceous, young parts pubescent, margins revolute. Flowers pentamerous. Calyx deeply 5-lobed. *Flowers cream to white; April.* Semideciduous bushland and scrub-forest. *Van der Schijff 5374.*

W S C N E

galpinii (Hiern) De Winter

(= *Royena galpinii* Hiern)

Small shrub, 0.6–1.3 m high. Shoots unbranched, straight, rufous-pubescent. Leaves cordate or rounded at base, densely shaggy-pubescent to tomentose below. Flowers

pentamerous, solitary, 9–15 mm long. Calyx deeply divided. *Flowers white; July to November.* Grassy slopes. *Onderstall 774* (flowers), *Mogg PRE 49295* (fruit).

W S C N E

lycioides Desf. subsp. *lycioides*

(= *D. lycioides* Desf.,
= *Royena lycioides* (Desf.) A. DC.)

Shrub, 0.6–7.0 m high. Leaves cuneate to obtuse at base, up to 40 mm long when mature, oblanceolate to obovate-oblanceolate, nerves not raised, sparsely hairy, glabrescent. Flowers pentamerous, solitary. Calyx deeply divided. *Flowers white, cream or yellow; September to December.* Drier areas. *Verdoorn 1232* (flowers), *Herman 784* (fruit).

W S C N E

lycioides Desf. subsp. *guerkei* (Kuntze) De Winter

(= *Royena lycioides* (Desf.) A. DC. subsp. *guerkei* (Kuntze) De Winter,
= *R. guerkei* Kuntze)

Shrub or tree, 1–3 or up to 5 m high. Leaves spreading-pubescent, glabrescent, cuneate to obtuse at base, 20–50 mm long when mature, secondary and tertiary nerves raised—reticulate below. Flowers as in subsp. *lycioides*. *Flowers white, cream or yellow; September to January.* Rocky habitats often quartzite outcrops, but also on flats. *Verdoorn PRE 49226* (flowers), *Germishuizen 1158* (fruit).

W S C N E

lycioides Desf. subsp. **nitens** (Harv. ex Hiern) De Winter
(= *Royena lycioides* (Desf.) A. DC. subsp. *nitens* (Harv. ex Hiern)
De Winter,
= *R. nitens* Harv. ex Hiern)

Shrub, up to 2 m high. Leaves cuneate to obtuse at base, up to 20 mm long, elliptic, oblanceolate to obovate, densely sericeous with silvery hairs on both sides. Flowers as in subsp. *lycioides*. Flowers white, cream or yellow; June to November. Rocky outcrops but also in open grassland. Galpin 5680.

W S C N E

lycioides Desf. subsp. **sericea** (Bernh.) De Winter
(= *Royena lycioides* Desf. subsp. *sericea* (Bernh.) De Winter,
= *R. sericea* Bernh.)

Shrub or tree, 0.6–7.0 m high. Leaves cuneate to obtuse at base, up to 80 mm long, oblanceolate-elliptic to obovate-cuneate, strigose to sericeous, secondary nerves raised. Flowers as in subsp. *lycioides*. Flowers white, cream or yellow; February to November. Rocky slopes. Codd 9805.

W S C N E

mespiliformis Hochst. ex A. DC.

Evergreen tree or shrub, up to 25 m high. Growth points sickle-shaped. Flowers tetra- or pentamerous. Male flowers sessile, 3 to many together in small pedunculate axillary cymes. Female flowers solitary, shortly pedicellate. Calyx lobes of female flowers undulate-plicate near base, sericeous-tomentose outside, cordate-acuminate. Flowers green, white or cream; September to March. Along rivers and in dry areas often on termite mounds. Codd & Dyer 4603 (male), Lang Tvl. Mus. 32315 (female).

W S C N E

natalensis (Harv.) Brenan subsp. **nummularia**
(Brenan) F. White

Small tree or shrub, up to 5 m high. Leaves spreading in 1 plane. Flowers trimerous with calyx cup- or disc-shaped. Male flowers solitary or in 2- or 3-flowered cymes. Female flowers solitary. Flowers white. Rocky outcrops. White 10287.

W S C N E

usambarensis F. White subsp. **usambarensis**

Shrub or tree, (1–)2–6(–10) m high. Leaves obovate, apex shortly and abruptly acuminate, lower surface virtually glabrous on lamina, sparsely puberulous or tomentellous on nerves. Flowers tetramerous, in 3–7-flowered cymes. Calyx completely concealing fruit. Flowers cream to greenish yellow. Woodland and thicket. Steyn 5184.

W S C N E

villosa (L.) De Winter var. **parvifolia** (De Winter) De Winter

(= *Royena villosa* L. var. *parvifolia* De Winter)

Forest shrub, 1.5–14.0 m high. Flowering twigs much-branched with branches spreading at right angles. Leaves cordate or rounded at base, not exceeding 35 mm when mature. Flowers pentamerous, up to 8 mm

long, solitary or 2- or 3-flowered in small racemes. Calyx deeply divided. Flowers yellow; January to June. Woodland and grassland and at forest edges. Van Wyk 5680 (flowers), Netshiungani 1542 (fruit).

W S C N E

whyteana (Hiern) F. White

(= *Royena whyteana* Hiern)

Shrub or tree, 0.5–2.0 m or up to 6 m high. Leaf base cordate. Flowers pentamerous, solitary or in small pseudoracemes. Calyx urceolate, densely hairy, shortly 5-lobed at apex of tube, bladder-shaped and enclosing fruit. Flowers creamy white; August to December. Mountainsides and ridges, often in rocky situations. Hemm 102a (flowers), Onderstall 1162 (fruit).

W S C N E

Euclea Murray (s. Afr.: 15 spp.) 6404000

De Winter. 1963. F.S.A. 26: 82–99.

White & Caveney. 1980. Bull. Jard. bot. nat. Belg. 50: 396–399.

White. 1983. F.Z. 7.1: 289–295.

Retief. 1986. Bothalia 16: 228.

crispa (Thunb.) Guerke subsp. **crispa**

Shrub or tree, 1–5 m high, or up to 8 m high. Young leaves and twigs pubescent. Leaf margin not or slightly undulate. Inflorescence a pseudoraceme. Corolla cleft halfway down, glabrous except for median line of appressed bristles. Fruits 4–5 mm in diameter. Flowers greenish cream, cream or white; September to April. Forest margins and kloofs or a component of bush groups found scattered in the veld. Codd 6705 (flowers), Germishuizen 256 (fruits).

W S C N E

crispa (Thunb.) Guerke subsp. **ovata** (Burch.) F. White

Shrub or tree, 1–5 m or up to 8 m high. Leaves ovate to lanceolate-elliptic, densely hairy when young, margin strongly undulate. Rest of characters as for subsp. *crispa*. Flowers greenish cream, cream or white; December. Component of bush groups found scattered in the veld. Sutton 618.

W S C N E

dewinteri Retief

Small, virgate, single- to multi-stemmed shrub, 1–2 m high. Branches hairy when young, glabrescent when older. Leaves broadly ovate to elliptic, crowded at ends of branches. Inflorescence a pseudoraceme. Corolla cleft halfway down, glabrous except for median line of appressed bristles. Flowers greenish yellow to dull white; November, February and May. Quartzite hillsides. Kruger 312.

W S C N E

divinorum Hiern

Shrub, 2–6 m high. Young leaves and twigs glabrous. Leaves narrowly elliptic, elliptic or occasionally lanceolate, margin strongly undulate. Inflorescences

dense and contracted, solitary or 2 or 3 in each axil. Corolla cleft halfway down. *Flowers white to cream; August to January*. Wooded hillsides, dry riverbanks and occasionally in open forest. *Pienaar 1002* (flowers), *Herman 768* (fruit).

W S C N E

linearis Zeyh. ex Hiern

Tree or shrub, 0.3–5.0 m high. Young leaves and twigs quite glabrous. Leaves linear to linear-falcate. Corolla cleft at least halfway down or more. *Flowers cream; October*. Rocky outcrops amongst boulders or dry wooded slopes. *Codd 9780* (flowers) & *10484* (fruit).

W S C N E

natalensis A. DC. subsp. **natalensis**

(= *E. multiflora* Hiern)

Small tree or shrub, 2–4 m or up to 12 m high. Leaves broadest in upper half or apex obtuse, sparsely and minutely setulose beneath. Corolla cleft halfway down, lobes with conspicuous mid-petaline keel. *Flowers greenish cream to pale yellow; March to November*. Arid bush and on hillsides or scrub forest. *Codd 2898*.

W S C N E

natalensis A. DC. subsp. **angustifolia** F. White

Small bushy tree or shrub, 2–5 m high. Leaves broadest at the middle, apex acute, densely pubescent beneath. Corolla as in subsp. *natalensis*. *Flowers greenish cream to pale yellow; March to November*. In bushland on rocky outcrops. *Buitendag 583*.

W S C N E

schimperi (A. DC.) Dandy var. **schimperi**

Small tree, 3–8 m high. Leaves and young twigs quite glabrous. Leaves obovate to broadly oblanceolate. Inflorescence an axillary raceme. Corolla cleft halfway down. *Flowers white to cream; January to April*. Rocky outcrops and bushclumps. *Gertenbach 7013*.

W S C N E

schimperi (A. DC.) Dandy var. **daphnoides** (Hiern) De Winter

Small tree, 3–8 m high. Leaves, twigs, inflorescence and corolla the same as in var. *schimperi* but leaves linear-oblanceolate to narrowly oblanceolate-elliptic. *Flowers white to cream; January to February and in May*. Rocky outcrops and bush clumps. *Codd 6040*.

W S C N E

undulata Thunb. var. **undulata**

Evergreen shrub or tree, 0.75–5.00 m or up to 7 m high. Leaves and young twigs glabrous. Leaves obovate to broadly obovate, apex rounded to subacute, margins undulate. Corolla cleft halfway down. *Flowers white, greenish white or cream; December to January*. Bushveld. *Retief 299*.

W S C N E

undulata Thunb. var. **myrtina** (Burch.) Hiern

(= *E. myrtina* Burch.)

Evergreen shrub or tree, 0.75–5.00 m or up to 7 m high. Leaves, twigs and corolla as in var. *undulata*, but leaves narrowly elliptic, elliptic or oblanceolate-elliptic, tapering ± equally to apex and base. *Flowers white, greenish white or cream; December to June*. Bushveld. *Codd 6582* (flowers), *Herman 797* (fruit).

W S C N E

ELATINACEAE

Herbs or shrublets, often aquatic or semi-aquatic. Leaves opposite; stipules paired, interpetiolar, small. Flowers usually small, regular, axillary. Petals 3–5, free. Fruit a capsule.

Key after Obermeyer in F.S.A. 22: 24 (1976).

- Flowers 5-merous; sepals with prominent, firm midrib and membranous margin; ovary ovoid or globose, attenuate into short or long styles; herbs or shrublets **Bergia**
 Flowers 3- (rarely 2-)merous; sepals without prominent midrib, texture homogeneous; ovary depressed-globose with minute styles; small, creeping, soft herbs, usually hygrophytic **Elatine**

Bergia L. (s. Afr.: 10 spp.)

5230000

Obermeyer. 1976. F.S.A. 22: 24–30.

anagalloides E. Mey. ex Fenzl

(= *B. alsinoides* Holzhammer)

Small, prostrate, annual herb. Flowers solitary, axillary, evenly distributed along stems, on long pedicels (up to 15 mm). *Petals longer than sepals, bright pink; June to August*. In damp places, usually calciphilous. *Van Wyk 546*.

W S C N E

capensis L.

Succulent annual herb, hydrophyte, 250 mm tall. Valves of capsule flat and recurved at dehiscence. Flowers with short pedicels, in many-flowered, tight clusters. *Flowers pale lilac; January to February and in May*. Often found in semipermanent rock pools. *Codd 6054*.

W S C N E

decumbens Planch. ex Harv.

Small undershrub, 200–500 mm tall. Leaves linear, usually glabrous, hard and shiny when dry, with swollen margin and prominent veins, the 6–9 teeth widely spaced. *Flowers white or pink; July to April.* Widespread and common in grassland in drier parts of the region. *Codd 2341.*

W S C N E

penteriana Keissl.

(= *B. prostrata* Schinz)

Prostrate perennial herb. Stems pilose. Leaves 5–10 mm long, narrowly ovate, coriaceous. Sepals short, spine-tipped. Styles short. *Flowers white or pink; November to July.* In sand, often in limestone areas. *Louw 2044.*

W S C N E

salaria Bremek.

(= *B. suffruticosa* Fenzl)

Erect or decumbent undershrub. Leaves narrowly ovate, 20–40 mm long, 10–20 mm broad, glandular-pubescent, soft, the many teeth close together, usually double-serate. *Flowers white, pink or pale mauve; June and September to October.* Warmer parts of the region, on sandy riverbanks or beside pans. *Van der Schijff 5688.*

W S C N E

Elatine L. (s. Afr.: 1 sp.)

5231000

Obermeyer. 1976. F.S.A. 22: 30–32.

triandra Schkuhr

Small, soft, creeping annual herb, hydrophyte. Leaves decussate, apex emarginate. *Flowers 3-merous, white or pink; January to February and in May.* In mud at edges of dams or in rock pools. *Codd 6074.*

W S C N E

ERICACEAE

Shrubs or trees, often growing in acid soils. Leaves alternate, opposite or mostly whorled, broad or small and firm, without stipules. Flowers regular. Petals 4 (or 5), united to form short to conspicuous corolla tube. Stamens (3)4–8(–14); anthers opening by means of pores. Ovary superior. Fruit a capsule, berry or drupe.

Key after Verdoorn in JI S. Afr. Bot. 20: 92 (1954).

Ovary inferior, fruit a succulent berry; leaves more than 30 mm long and 10 mm wide (i.e. not ericoid) **Vaccinium**
Ovary superior; fruit a capsule, leaves small, up to ± 10 mm long, usually with margins revolute to form a small solid subulate leaf (i.e. ericoid) **Erica**

Erica L. (s. Afr.: 646 spp.)

6237000

Guthrie & Bolus. 1909. F.C. 4,1: 47–309.
Verdoorn. 1954. JI S. Afr. Bot. 20: 91–109.
Dulfer. 1963. Ann. naturh. Mus. Wien 66: 19–33.
Davidson. 1985. S. Afr. J. Bot. 51: 71–73.
Oliver. 1987. S. Afr. J. Bot. 53,6: 455–458.
Davidson. 1989. S. Afr. J. Bot. 55,5: 473–475.

oblong pseudospikes at ends of branchlets. Corolla urceolate-cyathiform. Anthers included. Style included but sometimes exerted. *Flowers red; August to October and January to March.* Among rocks. *Venter 7165.*

W S C N E

alopecurus Harv. var. **alopecurus**

Erect shrub, up to 300 mm tall. Leaves 3-nate, sulcate, pubescent or hirsute. Flowers terminal, 3-nate forming a dense narrow pseudospike. Corolla ± 3 mm long, broad-ovoid or suburceolate-ovoid, pubescent. Anthers and style included. *Flowers pink; September and February to June.* Mountainous or rocky country along streams, frequently in deep kloofs. *Retief 461.*

W S C N E

alopecurus Harv. var. **glabrifolia** Bolus

Erect shrub, up to 300 mm tall. Characters the same as in var. *alopecurus* except for glabrous corolla. *Flowers pink; October.* Streambanks. *Moss 10456.*

W S C N E

alticola Guthrie & Bolus

Small shrub, up to 400 mm tall. Leaves 4-nate, slender, sulcate, glabrous. Flowers solitary in short dense, leafy,

atherstonei Diels ex Guthrie & Bolus

Procumbent shrub. Young branches densely covered by short white floccose hairs. Leaves 3-nate, sulcate, ciliate on margin. Flowers both terminal and axillary, solitary. Corolla tubular-campanulate, ± 5 mm long, strongly 4-nerved, pulverulent. Anthers subexserted. Style exerted. *Flowers mauvy pink; October to March.* Mountainous country on peaks or grassy slopes. *Deall 2613.*

W S C N E

caffrorum Bolus var. **caffrorum**

Small shrub, up to 2,5 m high. Leaves 4-nate, sulcate, ciliate. Flowers 4-nate or subumbellate or occasionally pseudolateral and clustered at ends of branches. Corolla obconic or obconic-cyathiform, almost concealed by calyx. Anthers included. Style exerted. *Flowers dirty white to pink; October to April.* Mountainous country on grassy slopes, edges of forest, cliffs or mountain tops. *Galpin 13090.*

W S C N E

cerinthoides *L. var. cerinthoides*

Shrub, up to 1 m high. Leaves 4–6-nate, sulcate to open-backed, variously pubescent and mostly glandular, hispid and ciliate. Flowers umbellate. Corolla tubular, 20–35 mm long, $\pm$ inflated, pubescent. Anthers included. Style included or exserted. *Flowers white, crimson or rarely rosy; July to June.* Mountainous country. *Drews 24.*

W	S	C	N	E
---	---	---	---	---

cerinthoides *L. var. barbertona* (Galpin) Bolus

Shrub, up to 1 m high. Characters the same as in var. *cerinthoides* but corolla broadly tubular, slightly inflated in middle and constricted at throat, viscose-pubescent; shorter than in var. *cerinthoides*. *Flowers white, crimson or rarely rosy; July to October.* Stony ridges on mountain summit. *Meeuse 10265.*

W	S	C	N	E
---	---	---	---	---

drakensbergensis Guthrie & Bolus

Shrub, up to 1,5 m high. Leaves 3- or 4-nate, linear, semiterete. Flowers 3- or 4–6-nate, terminal. Corolla suburceolate-cyathiform, glabrous. Anthers subexserted, rarely exserted. Style exserted. *Flowers white; July to June.* Rocky slopes or summits of koppies or mountains. *Codd 959.*

W	S	C	N	E
---	---	---	---	---

holtii Schweick.

Small, slender, erect shrub, up to 230 mm tall. Leaves sulcate, minutely puberulous and with sparsely scattered, patent, transparent, gland-tipped hairs. Flowers in subglobose heads. Sepals pilose with long gland-tipped hairs. Corolla ovate-urceolate or urceolate, $\pm$ 4 mm long. Stamens included. Style included. *Flowers white; March to April.* Grassy highlands in mountainous country. *Raal & Raal 1506.*

W	S	C	N	E
---	---	---	---	---

leptostachya Guthrie & Bolus var. **glabra** Dulfer

Low shrub, $\pm$ 40 mm tall. Leaves 3-nate, sulcate. Inflorescence axillary. Flowers few, solitary or binate. Corolla obconic. Anthers subincluded to included. Style shortly exserted. *Flowers white; November.* Among rocks. *Killick & Strey 2399.*

W	S	C	N	E
---	---	---	---	---

leucopelta Tausch var. **ephebioides** Bolus

Shrub, up to 1,5 m high. Leaves 3-nate, hispid with scanty or dense, coarse, stiff, white, sometimes gland-tipped hairs, sulcate. Inflorescence terminal. Flowers 3-nate, not in dense masses. Corolla broad-cyathiform or hemispherical, puberulous. Anthers subexserted or subincluded. Style included or exserted. *Flowers white or pale pink; July to October and January to April.* Open montane grassland, often near streams. *Codd 8750.*

W	S	C	N	E
---	---	---	---	---

leucopelta Tausch var. **luxurians** I. Verd.

Lax and spreading shrub. Leaves 3-nate, glabrous or sparsely pubescent with patent acute hairs and occasionally a few minute gland-tipped hairs, longer, more spreading, open backed. *Flowers terminal, pink; September and April.* Wooded hillsides. *Edwards 25293.*

W	S	C	N	E
---	---	---	---	---

merxmuelleri Dulfer

Shrub, 1,0–1,5 m high. Leaves 3-nate, glabrous. Corolla subglobose. Anthers included. Style exserted. *Flowers pink; December to May.* Among rocks. *Van der Schijff 7372.*

W	S	C	N	E
---	---	---	---	---

natalitia Bolus var. **natalitia**

Shrub, up to 2 m high. Leaves 3-nate, sulcate, mostly glabrous, sometimes hispidulous. Inflorescence terminal. Flowers 3-nate, sometimes umbellately clustered. Corolla cyathiform or subobconic. Anthers included. Style shortly exserted. *Flowers pink or white; October and January.* In ravines near streams. *Hilliard 4735.*

W	S	C	N	E
---	---	---	---	---

oatesii Rolfe var. **oatesii**

Erect shrub, up to 1,2 m high. Leaves 3- or 4-nate, puberulous or roughly hispidulous, naked or ciliate with long gland-tipped hairs. Inflorescence terminal. Flowers in few-flowered umbels. Corolla ovoid-tubular, 10–13 mm long, glabrous or puberulous. Anthers included. Style included but eventually exserted. *Flowers pink or scarlet; August and November to May.* Rocky or mountainous country usually near streams. *Roberts 14670.*

W	S	C	N	E
---	---	---	---	---

revoluta (Bolus) L.E. Davidson

(= *E. subverticillaris* Diels ex Guthrie & Bolus var. *revoluta* Bolus)

Erect bushy shrub, up to 1 m high. Leaves 4-nate, lower surface white. Inflorescence small racemose at ends of side shoots. Corolla cyathiform. Anthers subexserted. Style exserted. *Flowers white shaded pink; September.* Mountains. *Davidson 3264.*

W	S	C	N	E
---	---	---	---	---

rivularis L.E. Davidson

Erect shrub, up to 0,6 m high, covered with plumose white hairs. Leaves ternate. Flowers borne singly in axils of foliar bracts, crowded at ends of branches into terminal inflorescence. Sepals long, $3,8 \times 1,2$ mm, subfoliaceous. Corolla narrowly cyathiform, $4,5 \times 3,0$ mm. Stamens 8, included; anthers appendiculate. Style included, becoming exserted with age. *Flowers white turning brown soon; October to March.* Among rocks on streambanks. *Davidson 3800* (not seen).

W	S	C	N	E
---	---	---	---	---

simii (S. Moore) E.G.H. Oliv.

(= *Philippia simii* S. Moore)

Shrub, 0,5–1,0 m high. Leaves 3-nate, sulcate, glabrous and shiny, with margins ciliate-dentate. Corolla tubu-

lar-campanulate. Anthers included. Style exserted. *Flowers pale green; April to May.* Rocky slopes in mountains. *Codd 8758.*

W S C N E

subverticillaris *Diels ex Guthrie & Bolus*

Dwarf shrub, up to 500 mm tall. Leaves 3-nate, sulcate, glabrous. Flowers clustered on short branchlets towards ends of main branches—appearing ± interruptedly subspicate. Corolla broad-cyathiform, glabrous. Anthers included. Style exserted. *Flowers rosy; July.* Mountains. *Burt Davy 487.*

W S C N E

woodii *Bolus*

Erect or diffuse shrub, up to ± 0.6 m high. Leaves 3-nate, hispid-ciliate, scabrid-hispidulous or glabrous. Flowers mostly axillary, solitary along upper part of

branches. Corolla broad-cyathiform or subcampanulate. Anthers included or subincluded. Style exserted. *Flowers pale pink, red or white; July to June.* In ravines and on mountains. *Codd 7884.*

W S C N E

Vaccinium *L. (s. Afr.: 1 sp.)*

6216000

Bolus. 1891. Hooker's Icon. Pl. 20: t. 1941.

exul *Bolus*

Small tree or shrub, up to 2 m high. Leaves alternate, simple, elliptic, coriaceous, margins regularly serrate. *Flowers Erica-like, white; July to November.* Montane grassland or forest. *Mohle 424.*

W S C N E

ERYTHROXYLACEAE

Shrubs or trees. Leaves alternate, entire; apex emarginate, rounded or obtuse; stipules intrapetiolar. Flowers small, solitary or fascicled. Sepals 5 or 6. Petals as many as sepals, free, usually with an erect, transverse, 2-fid appendage on inner face. Stamens 10(–12), connate at base into cup- or saucer-shaped structure. Ovary superior, 1–3(4)-locular. Fruit a small, 1-seeded berry.

Erythroxylum *P. Browne (s. Afr.:*

4 spp.)

3956000

Robson. 1963. F.Z. 2: 103–108.

delagoense *Schinz*

(= *E. brownianum* Burt Davy)

Shrub or small tree, up to 6 m high. Leaves small, oblanceolate to obovate, 10–30 × 7–15 mm, pale green above, paler green below, thinly textured, margin entire. *Flowers white, yellow or green; October to November.* Woodland, forest margins, sandy soil, among rocks. *Van der Schijff 189.*

W S C N E

emarginatum *Thonn.*

(= *E. caffrum* Sond.)

Straggling shrub, up to 2 m high. Leaves oblanceolate to elliptic, usually 30–50 mm long, rather stiffly textured and hard, venation prominent, apex emarginate. Fruit ellipsoidal, fleshy, red. *Flowers white; October to December.* Forested ravines, fringing forest, rocky outcrops. *Leach 11539.*

W S C N E

ESCALLONIACEAE

Shrubs or trees, sometimes scandent. Leaves alternate, petioled, simple, ovate-oblong or elliptic; with toothed margins, teeth mostly glandtipped. Flowers small, white or pale green. Sepals 5. Petals 5, inserted on margin of calyx tube. Stamens 5. Ovary inferior, 2-locular; styles 2 with subglobose stigmas. Fruit a capsule.

Choristylis *Harv. (s. Afr.: 1 sp.)*

3241000

Coates Palgrave. 1977. Trees of southern Africa: 202–203.

rhamnoides *Harv.*

(= *Baeobotrys rufescens* E. Mey.,
= *Maesa palustris* Hochst.)

Shrub or scrambler, up to 4 m high. Leaves alternate, lamina ovate, apex acute, margin serrate, each serrature

with a minute gland. Inflorescence an axillary much-branched panicle. *Flowers white; July to June.* Margin of forest, woodland. *De Winter 9469.*

W S C N E

EUPHORBIACEAE

Herbs, shrubs or trees, sometimes stem succulents; milky latex or watery sap present. Leaves alternate, with stipules. Flowers unisexual, regular, either borne in a modified cup-like structure (cyathium) or in a regular inflorescence. Sepals 5. Petals 5 or absent. Ovary superior, 3-locular with 3-lobed style. Fruit a capsule.

Key after Dyer, Gen. 1: 306–308 (1975).

- 1a Flowers male, female or bisexual, with calyx, but petals present or absent 2
- 1b Apparent flower composed of a number of stamens (male flowers) mingled with bracteoles, with or without sessile or pedicellate ovary (female flower) in their midst and all enclosed in a $\pm$ cup-shaped involucre; mostly succulent plants 32
- 2a Stamens 1- or 2-seriate, outer opposite sepals, occasionally in middle of flower; ovules 2 in each loculus; seeds often carunculate 3
- 2b Stamens 1- or 2-seriate, outer alternate with sepals or more usually, central; ovules solitary in each loculus 13
- 3a Sepals of male flowers valvate in bud 4
- 3b Sepals of male flowers imbricate in bud 5
- 4a Fruit capsular; ovary 3-locular; tertiary nerves of leaves not parallel *Cleistanthus*
- 4b Fruit drupaceous; ovary 2-locular; tertiary nerves of leaves usually parallel *Bridelia*
- 5a Petals present in male flowers; male flowers fasciculate with cupular disc; female flowers solitary; slender shrub with small leaves *Andrachne*
- 5b Petals absent from male flowers 6
- 6a Flowers pedicellate, solitary or in axillary fascicles 7
- 6b Flowers dispersed in cymes, racemes or spikes 11
- 7a Disc absent; trees with branchlets and undersurface of leaves silky pilose *Androstachys*
- 7b Disc present, sometimes of separate glands 8
- 8a Disc central, entire or undulately lobed, with filaments inserted around it; fruit indehiscent *Drypetes*
- 8b Disc or glands in male flowers outside stamens or disc glands between filaments 9
- 9a Rudimentary ovary 3-partite *Flueggea*
- 9b Rudimentary ovary absent 10
- 10a Male disc usually composed of separate glands *Phyllanthus*
- 10b Male disc annular *Margaritaria*
- 11a Fruits compressed, winged; disc absent from both sexes *Hymenocardia*
- 11b Fruits not compressed or winged; disc usually present in male flowers 12
- 12a Fruits subdrupaceous or tardily septicidal, villous; flowers disposed in pedunculate cymes *Pseudolachnostylis*
- 12b Fruits small, drupaceous; flowers disposed in catkin-like spikes *Antidesma*
- 13a (2) Anthers reversed and filaments inflexed in bud, becoming erect in open flower; petals usually present in male flowers; racemes or spikes terminal *Croton*
- 13b Anthers erect and filaments straight or twice flexed in bud 14
- 14a Petals present, at least in male flower 15
- 14b Petals 0 17
- 15a Male calyx lobes valvate; trees mainly monoecious; stamens 10 or fewer, in 2 whorls on central column *Caperonia*
- 15b Male calyx lobes imbricate 16
- 16a Flowers panicled or in 2- or 3-branched, fasciculate cymes, female surrounded by male *Jatropha*
- 16b Flowers usually unisexual, in axillary fascicles or female often solitary; petals free, equal; stamens in single whorl of 5 below apex of central column *Clutia*
- 17a Sepals not open in bud 18
- 17b Sepals of male flower open in bud 31
- 18a Styles free or, if united, column slender and continuous with columella 19
- 18b Styles connate in column continuous with body of carpels; male segments valvate in bud 27
- 19a Flowers in terminal racemes, spikes or heads; filaments straight or twice flexed in bud *Cephalocroton*
- 19b Flowers in axillary, rarely terminal racemes, fascicles, cymules or spikes; filaments straight in bud 20
- 20a Anther locules separate, attached to filaments by their base only 21
- 20b Anther locules adnate laterally to connective throughout their length 24
- 21a Anther locules stalked; male sepals valvate; female sepals imbricate *Acalypha*
- 21b Anther locules sessile; sepals valvate, closed in bud 22
- 22a Style undivided; capsule 2-partite coccus; stamens (2)3–7; leaves usually alternate; flowers in terminal racemes *Leidesia*
- 22b Style plumosely lacinate or sometimes undivided; capsule 3-partite coccus 23
- 23a Peduncles elongate; branchlets subherbaceous (s. Afr.); buds naked *Micrococca*
- 23b Peduncles elongate; branchlets twiggly (s. Afr.), sometimes spinescent; buds with protective scales *Erythrococca*
- 24a Styles entire, free, elongate; stamens 8 *Alchornea*
- 24b Styles bifid, free or slightly united 25

- 25a Leaves palmately lobed *Ricinus*
 25b Leaves not as above 26
- 26a Stamens 2-seriate, peripheral; styles slightly connate; flowers in cymules; herbs *Adenocline*
 26b Stamens central; styles free; flowers glomerulate; trees or shrubs *Suregada*
- 27a (18) Ovary 4-locular, fruit $\pm$ winged; anthers numerous *Pterococcus*
 27b Ovary 3-locular 28
- 28a Flowers in dense, involucre heads *Dalechampia*
 28b Flowers in racemes or spikes 29
- 29a Stamens 30 or more *Ctenomeria*
 29b Stamens usually 3 30
- 30a Filaments free; calyx segments somewhat fleshy; styles free or slightly united at base *Tragia*
 30b Filaments united into short column; anthers at first erect, becoming reflexed; calyx segments lacinulate; styles united almost to apex into slender tube *Tragiella*
- 31a (17) Stamens free; calyx lobes of male flowers slightly imbricate; inflorescence a rather lax, terminal spike *Sapium*
 31b Stamens monadelphous; spikes dense, subcylindric; seeds not caruncled *Spirostachys*
- 32a (1) Involucre with single gland round its continuous or split rim 33
 32b Involucre with 2–8, usually 4 or 5 separate glands; fruit usually 3-locular 34
- 33a Shrubs with large leaves; involucre shallowly cup-shaped or saucer-like with continuous, occasionally 2–5-notched, glandular rim *Synadenium*
 33b Perennial dwarf succulent with deciduous leaves; involucre open on one side *Monadenium*
- 34a Plants with monopodial growth; leaves opposite and alternate *Euphorbia*
 34b Plants with sympodial growth, prostrate; leaves opposite *Chamaesyce*

Acalypha L. (s. Afr.: 21 spp.)

4407000

Prain. 1925. F.C. 5,2: 466–484.

Radcliffe-Smith. 1987. F.T.E.A. Euphorbiaceae 1: 185–213.

Radcliffe-Smith. 1989. Kew Bull. 44,3: 445–446.

angustata Sond. var. *glabra*

Herb, up to 300 mm tall. Leaves linear-lanceolate, up to 10 mm wide, entire or only remotely toothed, glands sessile, midrib and secondary nerves, parallel, conspicuous. Styles free, red. *Flowers red; September to December*. Grassland, hillsides. *Smith 3330*.

W S C N E

caperonioides Baill.

Herb, up to 150 mm tall. Stems annual from woody rootstock. Leaves ovate, 40–90 $\times$ 13–50 mm, subglabrous to hirsute, sessile, drying reddish brown, with veins conspicuous, sharply serrate-dentate. *Flowers red; September to November*. Grassland. *Rademacher sub TRV 12801*.

W S C N E

ciliata Forssk.

Herb, up to 1,3 m high. Leaves ovate, lamina up to 100 $\times$ 55 mm, acuminate, puberulous. Teeth of female bract linear to filiform, separate and erect. *Flowers green; February to March*. In shade of shrubs or trees. *Van der Schijff 2444*.

W S C N E

fimbriata Schumach. & Thonn.

Herb, up to 1 m high. Leaves ovate, up to 100 $\times$ 45 mm, distinctly petioled, with petioles up to 90 mm long, acuminate, serrate. Teeth of female flowers lanceolate, often $\pm$ contiguous and apically directed. *Flowers green; January to April*. Hillsides, disturbed areas. *Codd 6824*.

W S C N E

glabrata Thunb. var. *glabrata*

(=*A. glabrata* Thunb. var. *latifolia* Müll. Arg.)

Soft, straggly shrub, up to 3 m high, much-branched. Leaves firmly membranous, ovate, with lamina up to 85 $\times$ 55 mm, acute or acuminate, crenate or serrate except at entire base, distinctly petioled, with petiole up to 55 mm long. *Flowers green; September to May*. Riverine forest, montane bushland, riverbanks. *Buitendag 1116*.

W S C N E

glabrata Thunb. var. *pilosior* (Kuntze) Prain

Shrub, up to 3 m high. Leaves $\pm$ densely, persistently pubescent or velvety beneath, ovate, up to 60 $\times$ 40 mm. *Flowers green; October to April*. Bushveld, riverine woodland, riverbanks. *Codd 759*.

W S C N E

glandulifolia Buchinger ex Meisn.

(=*A. entumenica* Prain)

Herb, up to 100 mm tall. Leaves with stipitate glands, especially on margins and teeth, lanceolate, 15–25 $\times$ 3–13 mm, sessile. Styles free, much longer than bracts. *Flowers dark green; October to January*. Grassland and woodland. *Krynauw 1305*.

W S C N E

indica L.

Erect herb, up to 0,6 m high. Stems simple below. Leaves ovate, serrate, distinctly petiolate, with petioles up to 55 mm long. Female bracts repand-dentate, 5–11 mm long when mature. Female flowers sessile. *Flowers green; January to April*. Bushveld, sandy loam soil, roadsides, disturbed veld. *Codd & Dyer 3892*.

W S C N E

ornata Hochst. ex A. Rich.

(A. moggii Compton)

Herb, up to 1.3 m high. Stems erect from woody rootstock, red. Leaves broadly ovate, up to 80 × 60 mm, acuminate, dentate, with petioles up to 80 mm long. Bracts with stalked glands. *Flowers red; January.* Grassland, streambanks. *Bruce 500.*

W S C N E

peduncularis E. Mey. ex Meisn.

Semi-erect herb, up to 150 mm tall. Leaves sessile, serrate, ovate to ovate-lanceolate. Terminal lobe of upper female bracts not much longer than broad nor much longer than other lobes. Styles free, red, longer than bracts. *Flowers red; September to January.* Grassland, rocky hillsides. *Glen 1289, 1293.*

W S C N E

pubiflora Baill.

Shrub, up to 3 m high. Leaves petiolate, ovate to narrowly ovate, up to 120 × 50 mm, crenate-serrate. Flowering peduncles conspicuous. *Flowers white; December.* Bushveld, sandy soil, streambanks. *Pole-Evans 4268.*

W S C N E

punctata Meisn. sens. lat.

Herb, up to 500 mm tall. Leaves with sessile or some stipitate glands, ovate to narrowly ovate, up to 70 × 40 mm, sharply serrate-dentate. Styles free, red. *Flowers red; September to December.* Grassland. *Leendertz sub TRV 9405.*

W S C N E

schinzii Pax

(= A. depressinerva (Kuntze) K. Schum.)

Herb, up to 300 mm tall. Stems annual from woody rootstock. Leaves entire, hirsute, linear-lanceolate, secondary and tertiary nerves inconspicuous. Styles free, red. *Flowers red; September to February.* Grassland. *Pienaar 726.*

W S C N E

segetalis Müll. Arg.

Herb, up to 400 mm tall. Stems much-branched at base. Leaves petiolate, crenate. Female bracts crenate, up to 13 × 15 mm when mature. *Flowers green; November to February.* Grassland, bushveld and woodland. *Venter 10539.*

W S C N E

villicaulis Hochst.

(= A. senensis Klotzsch)

Perennial herb, up to 1 m high. Leaves serrate or crenate-serrate, dull, ovate to ovate-lanceolate, 50–125 × 10–40 mm, acuminate, pubescent or hirsute. Male peduncles the same length as or shorter than inflorescences. Styles free, up to 16 mm long, red. *Flowers green; November to April.* Grassland. *Galpin 11671.*

W S C N E

wilmsii Pax ex Prain & Hutch.

Herb, up to 1 m high. Leaves often hirsute, 35–90 × 13–45 mm, veins conspicuous. Glands on upper leaves and outside of female bracts stipitate. *Flowers red; August to January.* Grassland. *Galpin 1126.*

W S C N E

Adenocline Turcz. (s. Afr.: 3 spp.) 4370000

Pax. 1914. Pflanzenreich 63: 409–415.

acuta (Thunb.) Baill.

(= A. mercurialis Turcz.)

Herb, up to 500 mm tall. Leaves opposite, base cordate, apex acuminate, blade triangular-ovate, 40–85 × 25–45 mm, margin serrate. *Flowers greenish yellow; October to April.* Forest. *Kluge 1774.*

W S C N E

pauciflora Turcz.(= *Mercurialis pauciflora* Baill.)

Annual herb, up to 300 mm tall. Leaves alternate, blade narrowly ovate, 8–45 × 1–16 mm, margin toothed. *Flowers yellowish green; December.* Mountain grassland. *Devenish 1089.*

W S C N E

Alchornea Sw. (s. Afr.: 2 spp.) 4388000

Pax. 1914. Pflanzenreich 63: 242.

Coates Palgrave. 1977. Trees of southern Africa: 425–426.

Radclyffe-Smith. 1987. F.T.E.A. Euphorbiaceae 1: 251–260.

hirtella Benth. forma **glabrata** (Müll. Arg.) Pax & K. Hoffm.

(= A. glabrata (Müll. Arg.) Prain)

Shrub or tree, up to 12 m high. Leaf base cuneate, blade usually elliptic to narrowly ovate, up to 150 × 55 mm, margin toothed. Male flowers in sprays, 200 × 150 mm. Female flowers in spikes, 20–50 mm long. *Flowers yellow or green; October to December.* Evergreen forest. *Van Wyk 3114.*

W S C N E

laxiflora (Benth.) Pax & K. Hoffm.

Shrub or small tree, up to 6 m high. Leaf base rounded to narrowly lobed, blade usually broadly obovate to broadly oblong, up to 200 × 90 mm, apex attenuate. *Flowers red; October to November.* Woodland, riverine fringe forest and thicket. *Codd & Dyer 4525.*

W S C N E

Andrachne L. (s. Afr.: 1 sp.) 4286000

Hutchinson. 1925. F.C. 5.2: 385–386.

Coates Palgrave. 1977. Trees of southern Africa: 394.

ovalis (Sond.) Müll. Arg.
(= *Phyllanthus ovalis* Sond.)

Shrub, up to 3 m high. Leaves closely arranged along slender branches. Flowers very small, monoecious. Male flowers in axillary clusters. Female flowers solitary. *Flowers cream; November to March.* Evergreen forests, forest margins. Van Wyk 5989.

W S C N E

Androstachys Prain (s. Afr.: 1 sp.) 4345010
Hutchinson. 1925. F.C. 5,2: 377.

johnsonii Prain

Tree, up to 15 m high. Branchlets ± silky-hairy, angular and articulated. Leaves opposite, decussate, long-petiolate, coriaceous, ± silky beneath. *Flowers yellow; August to October.* Deciduous woodland, thickets, rocky hillsides. *Balsinhas* 3583.

W S C N E

Antidesma L. (s. Afr.: 2 sp.) 4327000
Coates Palgrave. 1977. Trees of southern Africa: 405–407.
Ross. 1978. Flower. Pl. Afr. 45: t. 1795.

venosum E. Mey. ex Tul.

Dioecious shrub or tree, up to 10 m high. Leaves bright, glossy green above, paler green below. Fruits 8 × 4 mm, white when young, becoming bright red and finally black in dense tassel-like sprays, 80–120 mm long. *Flowers dull yellow; November to March.* Woodland, wooded grassland, forest margins. *Jordaan* 294.

W S C N E

Bridelia Willd. (s. Afr.: 5 spp.) 4345000
Coates Palgrave. 1977. Trees of southern Africa: 412–414.

cathartica Bertol. f.

(= *B. cathartica* Bertol. f. subsp. *melanthesoides* (Klotzsch) J. Léonard,
= *B. schlechteri* Hutch.)

Shrub or small tree, up to 6 m high. Leaves without hairs, oblong, elliptic to broadly oblanceolate, 30–90 × 15–45 mm, discolorous, apex broadly tapering to rounded. *Flowers green to yellow; February to March.* Streambanks, riverine fringe thicket, scrub. *Codd* 5403.

W S C N E

micrantha (Hochst.) Baill.

Tree, up to 15 m high. Leaves glabrous, apex shortly attenuate, elliptic to obovate, usually 70–80 × 35–40 mm, dark glossy green above, paler below, lateral veins terminating in margin. *Flowers yellow; October to December.* Riverine forest, patches of relic forest, and open woodland. *Codd* 5687.

W S C N E

mollis Hutch.

Shrub or small tree, up to 7 m high. Leaves ovate to obovate, 25–130 × 13–90 mm, apex broadly tapering and often notched, both leaf surfaces with dense velvety hairs, lateral veins terminating in margin. *Flowers greenish yellow; October to May.* Granite koppies, among rocks. *Zambatis* 539.

W S C N E

Caperonia A. St.-Hil. (s. Afr.: 2 spp.) 4361000
Prain. 1925. F.C. 5,2: 456–457.

stuhlmannii Pax

Erect, annual herb, up to 1 m high. Stems branched. Leaves alternate, margin serrate. Racemes axillary, with numerous male flowers above and a few basal female flowers. *Flowers green; January to April.* Grassland, clayey soil. *Theron* 2993.

W S C N E

Cephalocroton Hochst. (s. Afr.: 1 sp.) 4439000
Radcliffe-Smith. 1973. Kew Bull. 28,1: 123–132.

mollis Klotzsch

(= *C. depauperatus* Pax,
= *C. puschellii* Pax)

Much-branched shrub, up to 1 m high. Twigs, leaves and pedicels stellate velvety. Leaves simple, oblong, subentire, subsessile. Styles yellow. *Flowers yellow; October to February.* Mopani veld. *Netshiungani* 1321.

W S C N E

Chamaesyce Gray (s. Afr.: 17 spp.) 4498010

Brown. 1925. S. Afr. J. Bot. 3,4: 262–264.
Webster & Burch. 1968. Ann. Mo. bot. Gdn. 54: 211.
Koutnik. 1984. S. Afr. J. Bot. 3,4: 262–264.

glanduligera (Pax) Koutnik

(= *Euphorbia glanduligera* Pax,
= *Euphorbia glauccella* Pax)

Erect herb, up to 300 mm tall, branching from base. Leaves glaucous, lanceolate to linear, opposite, margin entire. Cyathia with 4 glands. Capsule hairy. *Flowers yellowish green; December.* Bushveld. *Dyer* 4317.

W S C N E

hirta (L.) Millsp.

(= *Euphorbia hirta* L.)

Erect or prostrate herb. Stems with conspicuous spreading yellow hairs on their upper part. Leaves ovate to elliptic, margins serrate, base oblique. Involucres in dense subglobose heads. *Flowers reddish green; July to June.* Bushveld, mopani veld, lawns. *Van Jaarsveld* 116.

W S C N E

hypericifolia (L.) Millsp.*(= *Euphorbia hypericifolia* L.)

Annual or perennial herb, up to 400 mm tall. Leaf margin serrate, at least in upper third. Cyathia in almost leafless lateral and terminal glomerules. Capsule glabrous, shorter than 1,4 mm. *Flowers reddish brown; October to May.* Grassland, bushveld, disturbed places. Native to the Neotropics. *Liebenberg* 8679.

W S C N E

inaequilatera (Sond.) Soják(= *Euphorbia inaequilatera* Sond.,= *Euphorbia sanguinea* Boiss.)

Annual, prostrate herb, much-branched, glabrous. Leaves ovate, up to 14 × 6 mm, base obliquely rounded, apex obtuse, margin serrate. Stipules ± 1,5 mm long, deeply divided into 3–5 linear teeth. *Flowers greenish purple; September to May.* Grassland, disturbed places. *Retief* 1877.

W S C N E

neopolycnemoides (Pax & K. Hoffm.) Koutnik(= *Euphorbia neopolycnemoides* Pax & K. Hoffm.)

Annual herb, up to 350 mm tall, usually glabrous, often tinged red. Leaves subsessile, lanceolate, up to 18 × 4 mm. Stipules not longer than 1 mm, triangular. *Flowers reddish brown and white; November to May.* Grassland, bushveld and woodland. *Herman* 164.

W S C N E

prostrata (Aiton) E. Small*(= *Euphorbia chamaesyce* L.)

Prostrate, annual herb, glabrous on underside, pilose above, often tinged purplish. Leaves ovate, up to 8 × 5 mm. Capsule with a row of hairs along each suture. *Flowers green; November to April.* Grassland, disturbed places. Native of South America. *Codd* 5992.

W S C N E

serpens (Humb., Bonpl. & Kunth) E. Small*(= *Euphorbia serpens* Humb., Bonpl. & Kunth)

Glabrous, prostrate annual herb. Leaves subcircular, 1–3 mm in diameter, base obliquely cordate, margin entire. Stipules broadly triangular. *Flowers greenish white; September to April.* Disturbed places. Native of America. *Hanekom* 1876.

W S C N E

tettensis (Klotzsch) Koutnik(= *Euphorbia tettensis* Klotzsch)

Prostrate or erect herb, up to 300 mm tall, pilose. Leaves conspicuously opposite, ovate, up to 15 × 9 mm. Cyathia in axils of leaves. *Flowers white; February to July.* Bushveld. *Nel* 5561.

W S C N E

Cleistanthus Hook. f. ex Planch.

(s. Afr.: 1 sp.)

4343000

Coates Palgrave. 1977. Trees of southern Africa: 410–411.

schlechteri (Pax) Hutch. var. **schlechteri**(= *C. holtzii* Pax,= *Securinea schlechteri* Pax)

Small to large tree, up to 20 m high. Leaves elliptic, apex broadly tapering to rounded. Flowers produced in profusion in axillary clusters. Pedicels 15–20 mm long. Fruit 10 mm in diameter. *Flowers golden-green; September to November.* Open woodland, riverbanks. *Van Wyk & Pienaar* 4729.

W S C N E

Clutia L. (s. Afr.: 33 spp.)

4448000

Prain. 1925. F.C. 5,2: 427–456.

Meyer. 1963. F.S.W.A. 67: 6.

affinis Sond.

Shrub, up to 3 m high. Leaves distinctly petioled, pubescent or puberulous on both surfaces with rather distinct main nerves, usually paler beneath, oblong-obovate or linear-elliptic, up to 70 mm long. *Flowers yellowish green; November to March.* Grassland, shrubland and forest margins. *Hemm* 28.

W S C N E

hirsuta E. Mey. ex Sond. var. **hirsuta**

Shrub, up to 1,2 m high. Stems and leaves sparingly to densely, persistently pubescent. Leaves ovate to lanceolate, persistently pellucid-punctate. Capsule pubescent. *Flowers yellowish white; November to January.* Grassland, rocky slopes. *Codd* 2324.

W S C N E

laxa Eckl. ex Sond.

Shrublet, up to 0,6 m high. Stems copiously branching. Leaves sessile, oblong-obovate, up to 10 mm long. Petals 2-glandular at base. *Flowers yellowish green; September to April.* Bushveld. *Galpin* 934.

W S C N E

monticola S. Moore

Perennial herb, up to 350 mm tall, many-stemmed. Leaves cuneate or rounded at base, sessile, ovate-oblong to ovate-lanceolate, up to 40 mm long. Ovary glabrous. *Flowers greenish white to yellow; July to November.* Woodland and grassland. *Scheepers* 472.

W S C N E

natalensis Bernh. ex Krauss

Shrub, up to 1,5 m high. Stems much-branched. Leaves pellucid-punctate, margin flat, pubescent when young, soon glabrescent, linear to oblong-lanceolate, up to 70 mm long. *Flowers pale yellow; October to February.* Grassland, streambanks. *Germishuizen* 3911.

W S C N E

pulchella L. sens. lat.(= *C. galpinii* Pax)

Shrub, up to 2,5 m high. Leaves distinctly petioled, pellucid-punctate, lamina ovate or ovate-oblong, rarely

suborbicular. Capsule warted-punctate. *Flowers white; December to March.* Bushveld, woodland and grassland. *Leach 13259.*

W S C N E

virgata Pax & K. Hoffn.

Shrublet, up to 450 mm tall. Stems simple, several from woody base. Leaves sessile, discolorous, oblong-obovate to obovate-lanceolate, 10–15 × 2–5 mm. Petals 1-glandular. *Flowers greenish yellow; July to June.* Grassland, rocky slopes. *Viljoen 58.*

W S C N E

Croton L. (s. Afr.: 11 spp.) 4348000

Coates Palgrave. 1977. Trees of southern Africa: 415–420.

gratissimus Burch. var. gratissimus

Shrub or small tree, up to 10 m high. Leaves with upper surface glabrous, dark shiny green, undersurface covered with dense silvery scales, dotted with small cinnamon-coloured glandular scales. *Flowers in racemes up to 100 mm long; cream to golden yellow; July to June.* Woodland, rocky outcrops. *Venter 7829.*

W S C N E

gratissimus Burch. var. subgratissimus (Prain) Burt

Davy

(= *C. subgratissimus* Prain)

Shrub or small tree, up to 10 m high. Leaves with stellate hairs on upper surface, undersurface covered with dense silvery scales, dotted with small cinnamon-coloured glandular scales. *Flowers cream to golden yellow; July to April.* Woodland, grassland, bushveld, rocky outcrops. *Retief 620.*

W S C N E

madandensis S. Moore

Shrub, up to 2 m high. Leaves ovate, margin entire, thinly chartaceous, sparsely pubescent. *Flowers yellow; January.* Woodland, streambanks. *Acocks 16718.*

W S C N E

megalobotrys Müll. Arg.

(= *C. gubouga* S. Moore)

Tree, up to 15 m high. Leaves with whitish, silvery green stellate hairs, especially on undersurface when young, margin irregularly and roughly dentate. *Flowers yellowish green; October to January.* Riverine fringe forest and thicket. *Retief 222.*

W S C N E

menyharti Pax

Shrub or small tree, up to 3 m high. Undersurface of leaves distinctly silvery, produced by dense scales, upper surface roughish to the touch, stellate-puberulous. *Flowers yellow; October to December.* Riverine woodland and bushveld. *Codd 6682.*

W S C N E

pseudopulchellus Pax

Shrub, up to 2 m high. Lateral nerves of leaves distinctly raised above, undersurface of leaves with conspicuous dark reddish brown to red scale dots. *Flowers in small compact racemes only ± 10 mm long; yellow; July to June.* Woodland. *Theron 2723.*

W S C N E

steenkampianus Gerstner

Shrub, up to 3 m high. Undersurface of leaves covered with silvery, stellate hairs and scales, upper surface with sparse stellate hairs. Margin of leaves entire. *Flowers creamy green; November.* Woodland, forest edges, riverbanks. *Schlieben 9304.*

W S C N E

sylvaticus Hochst.

Small to large tree, up to 13 m high. Leaves uniform green on both surfaces, margin dentate. Male and female flowers produced together in spikes up to 150 mm. *Flowers cream or pale yellow; October to December.* Forest and woodland. *Scheepers 1027.*

W S C N E

Ctenomeria Harv. (s. Afr.: 1 sp.) 4416010

Prain. 1925. F.C. 5.2: 500–502.

capensis (Thunb.) Harv. ex Sond.

(= *C. cordata* Harv.,

= *C. schlechteri* (Pax) Prain)

Twining, pubescent herb. Leaves alternate, ovate, cordate at base. Racemes terminal or leaf-opposed, with numerous male flowers above and 1 or 2 basal female flowers. *Flowers greenish yellow; August to January.* Forest. *Stalmans 697.*

W S C N E

Dalechampia L. (s. Afr.: 4 spp.) 4422000

Prain. 1925. F.C. 5.2: 497–500.

Webster & Webster. 1972. Am. J. Bot. 59.6: 573–586.

capensis A. Spreng.

(= *D. kirkii* Prain)

A scandent undershrub with stems up to 3 m long. Leaves 3–5-lobed or -partite but not divided to base. Male bracts glandular-lacinulate. *Flowers yellow; November to May.* Bushveld and woodland. *Coetzee 1328.*

W S C N E

galpinii Pax

A prostrate undershrub. Leaves divided into distinct leaflets which are prominently reticulately veined beneath. Involucral bracts small, yellowish green. *Flowers yellow; September to March.* Woodland and bushveld. *Zambatis 1116.*

W S C N E

Drypetes Vahl (s. Afr.: 5 spp.) 4309000

Radcliffe-Smith. 1976. Kew Bull. 32,3: 475–480.

gerrardii Hutch.

Shrub or tree, up to 30 m high. Young shoots and petioles evenly to sparingly yellowish pubescent at first, later glabrescent. Leaves shallowly remotely crenate-serrate to subentire, leaf blade ovate, 50–100 (–150) mm long. *Flowers yellowish green, yellow or creamy white; September to April.* Open woodland, evergreen forest and riverine fringe forest. *Venda Herb. 1131.*

W S C N E

mossambicensis Hutch.

Tree, up to 20 m high. Leaf margin entire, apex usually rounded to broadly tapering, very seldom attenuate and then shortly and rather obscurely so. Fruit narrowly ovoid. *Flowers yellow; September to December.* Woodland, rocky outcrops, termite mounds. *Biological Section-K.N.P. 4625.*

W S C N E

reticulata Pax

Shrub or tree, up to 15 m high. Leaves entire or almost so, blade usually ovate, 40–120 × 15–85 mm, tertiary nerves strongly and rather irregularly reticulate. *Flowers yellowish green; October to January.* Evergreen forest, thicket, rocky places. *Codd & Dyer 4559.*

W S C N E

Erythrococca Benth. (s. Afr.: 4 spp.) 4368000

Prain. 1925. F.C. 5,2: 459–460.

Coates Palgrave. 1977. Trees of southern Africa: 423–424.

menyharthii (Pax) Prain

Shrub, up to 3 m high. Leaf blade shallowly and remotely denticulate, firmly membranous to thinly chartaceous. Stamens 2–8. Stigmas laciniate; ovary 3-lobate, sparingly strigose to ± glabrous. *Flowers green; September to May.* Bushveld, woodland, thicket, rocky places. *Van der Schijff 4110.*

W S C N E

Euphorbia L. (s. Afr.: 254 spp.) 4498000

White, Dyer & Sloane. 1941. Succulent euphorbias 1 & 2.

Meyer. 1973. F.S.W.A. 67: 10.

Leach. 1976. Dinteria 12: 1–35.

Leach. 1984. JI S. Afr. Bot. 50: 563–568.

Leach. 1985. S. Afr. J. Bot. 51: 281–283.

Leach. 1986. S. Afr. J. Bot. 52: 10–12.

Leach. 1986. S. Afr. J. Bot. 52: 369.

Carter. 1988. F.T.E.A. Euphorbiaceae 2: 409–531.

aeruginosa Schweick.

Dwarf succulent, up to 300 mm tall. Branches copper green, cylindric or subcylindric; angles not usually evident except by arrangement of reddish spine shields.

Flowers copper yellow; October to December. Woodland, rocky situations. *Hardy 5552.*

W S C N E

barnardii A.C. White, R.A. Dyer & B. Sloane

Much-branched, succulent shrub, up to 0.6 m high. Branches 5- or 6-angled, constricted at intervals into irregularly shaped segments. Spine shields united to form continuous horny grey margin. Spines in pairs. *Flowers yellow; January.* Mixed bushveld, between sandstone boulders. *Barnard 449.*

W S C N E

clavarioides Boiss. var. truncata (N.E. Br.) A.C. White,*R.A. Dyer & B. Sloane*(≡ *E. truncata* N.E. Br.)

Dwarf succulent, up to 75 mm tall, forming a flat-topped or, with age, a slightly convex mass up to 75 mm tall in centre and 75–300 mm in diameter, composed of densely crowded branches. *Flowers yellow; March to September.* Grassland. *Turner 1474A.*

W S C N E

clivicola R.A. Dyer

Dwarf, spiny, perennial succulent. Branches yellowish green, congested into a mass, furnished with a few spine pairs, obscurely 4-angled by the ± decussate arrangement of tubercles. Bushveld, hillsides. *Flowers sub PRE 28386.*

W S C N E

complexa R.A. Dyer

Spiny, succulent shrub, up to 400 mm tall. Branches usually thinner than 10 mm. Spines produced in pairs at apex of tubercles, 4–5 mm long, diverging, with a pair of prickles, 2.0–2.5 mm long. Spine shields separate. *Flowers yellow; May to June.* Bushveld. *Leach & Jones 12851.*

W S C N E

confinalis R.A. Dyer subsp. confinalis

Succulent tree, up to 8 m high. Trunk simple or occasionally with 1 or 2 trunk-like branches. Branches constricted at intervals of 50–200 mm with ± parallel sides, ultimate branches 3- or 4-(5-)angled. Involucral bracts wider than long, shorter than involucre. *Flowers yellow.* Dry lowveld bush, rocky hills. *Van der Schijff 510.*

W S C N E

cooperi N.E. Br. ex A. Berger var. cooperi

Spiny, succulent shrub or tree, up to 5 m high. Trunk cylindric. Branches 5- or 6-angled, deeply constricted into conic-ovate segments. Angles wing-like. Spine shields united into continuous, horny greyish margin. *Flowers yellow; May to June.* Bushveld. *Schweickerdt & Verdoorn 649.*

W S C N E

crotonoides Boiss. subsp. **crotonoides**

Annual herb, up to 500 mm tall, pilose with long spreading hairs. Leaves reflexed, linear-lanceolate to ovate, subentire to markedly serrate. Styles erect, up to 2.5 mm long. *Flowers reddish brown; March to April.* Open woodland, scattered bushveld, sandy, stony or disturbed soils. *Germishuizen 215.*

W	S	C	N	E
---	---	---	---	---

cyathophora J. Murray*

Annual herb, up to 1 m high. Leaves ovate to linear or sometimes fiddle-shaped, entire or toothed, upper leaves and bracts red or red-based. Floral bracts panduriform, with red blotch at base. *Flowers green; August to January.* Disturbed places. Native of America and Mexico. *Scheepers 564.*

W	S	C	N	E
---	---	---	---	---

davyi N.E. Br.

Dwarf succulent, up to 100 mm tall, spineless but with occasional, persistent remains of peduncles. Branches up to $\pm$ 150 mm long, 12–20 mm thick. Peduncles 2–5 mm long. *Flowers yellow; January to August.* Bushveld, rocky hillsides. *Codd 3515.*

W	S	C	N	E
---	---	---	---	---

duseimata R.A. Dyer

Dwarf succulent, up to 60 mm tall, with tuberous main root and 1 or 2 underground stems, each producing 6 to 9 branches from its apex at $\pm$ ground level. Tubercles not very prominent. Peduncles deciduous. *Flowers whitish green; September.* Grassland. *Plowes sub PRE 46275.*

W	S	C	N	E
---	---	---	---	---

enormis N.E. Br.

Dwarf succulent, up to 400 mm tall, spiny with thickened roots and stems, forming tuberous underground body, 75–100 mm thick. Suberect branches 10–16 at apex, usually 150–200 mm long (longer in shade), up to 25 mm thick, clavate or constricted, tubercled. *Flowers yellowish green; July to June.* Bushveld. *Codd 2294.*

W	S	C	N	E
---	---	---	---	---

epicyparissias E. Mey. ex Boiss. var. **epicyparissias**

Perennial herb, up to 2 m high. Stems with branches scattered along it or clustered at intervals, densely leafy. Leaves sessile, deflexed or upcurved, linear or oblong-linear. *Flowers yellowish green; September to January.* Grassland. *Mohle 241.*

W	S	C	N	E
---	---	---	---	---

espinosa Pax

Shrub or small tree, up to 3 m high, many-stemmed, woody. Leaves ovate to elliptic, up to 55 $\times$ 32 mm. *Flowering December and April.* Woodland, wooded mountainsides. *Fourie M174.*

W	S	C	N	E
---	---	---	---	---

evansii Pax

Spiny, succulent tree, up to 10 m high. Main trunk cylindric with 1 to several erectly ascending stem-like branches. Secondary branches and branchlets up to 15 mm thick, slender and not at all constricted into segments, acutely 3- or 4-angled. *Flowers yellow; August to September.* Lowveld bush. *Marais 274.*

W	S	C	N	E
---	---	---	---	---

excelsa A.C. White, R.A. Dyer & B. Sloane

Spiny, succulent tree, up to 10 m high. Branches ascending, angles becoming obsolete with age. Spine shields united into continuous horny margin which becomes dark brown. Peduncles almost obsolete with 4 very short, broad bracts subtending cyme. *Flowers yellow; March to June.* Bushveld, dry, rocky hillsides. *Codd & Dyer 7747.*

W	S	C	N	E
---	---	---	---	---

grandialata R.A. Dyer

Spiny, succulent shrub, up to 2 m high. Branches 4-angled, constricted into subcordate or pyramidal-cordate segments, 70–150 mm, angles compressed, green on sides with yellowish green bands radiating $\pm$ to the flowering eyes. Spine shields united into continuous margin. *Flowering August to September.* Bushveld, dolomite hillsides. *Dyer 5789.*

W	S	C	N	E
---	---	---	---	---

griseola Pax subsp. **griseola**

Dwarf shrub, up to 0.75 m high. Branches 4–6-angled, branchlets not or only slightly constricted at distant intervals. Spine shields usually united into continuous horny margin. *Flowers yellowish green; January to August.* Rocky outcrops, rock crevices. *Dyer, Verdoorn & Ehrens 4203.*

W	S	C	N	E
---	---	---	---	---

groenewaldii R.A. Dyer

Dwarf succulent, up to 70 mm tall, spiny. Main stem and root forming large subterranean tuberous body up to 180 mm long and 70 mm thick. Branches 3–7 from narrow apex, 25–70 mm long, 12–20 mm thick, not constricted into segments, spirally twisted, prominently tubercled. *Flowers yellow; May.* Stony hillsides. *Van der Merwe sub PRE 51820.*

W	S	C	N	E
---	---	---	---	---

gueinzii Boiss. var. **gueinzii**

Perennial herb, up to 150 mm tall, with underground stems from which herbaceous branches arise. Leaves variable, usually glabrous. Branches thinly to thickly covered with rather long spreading hairs. *Flowers green and red; September to December.* Grassland. *Buitendag 668.*

W	S	C	N	E
---	---	---	---	---

gueinzii Boiss. var. **albovillosa** (Pax) N.E. Br.
(= *Euphorbia albovillosa* Pax)

Perennial herb, up to 150 mm tall, with underground stems from which herbaceous branches arise. Branches, both sides of leaves and involucre all densely hairy or villous. *Flowers green; September.* Grassland. Onderstall 796.

W S C N E

guerichiana Pax

(= *E. commiphoroides* Dinter,
= *E. frutescens* N.E. Br.)

Woody shrub or small tree, up to 6 m high. Leaves 3.0–6.0 × 1.3–2.5, oblong, obovate or lanceolate, minutely puberulous on both sides. Cyathia solitary, produced on very suppressed flowering branchlets. *Flowers lime-green; August to November.* Woodland and mopani veld. *Van der Schijff 3534.*

W S C N E

helioscopia L.*

Erect annual herb, up to 300 mm tall. Leaves simple, sessile, obovate, glabrous, margins closely serrate in upper half. Flowers in terminal umbels of branched cymes. Capsules 3 mm long. *Flowers greenish yellow; June to September.* Weed in cultivated land. Native of Europe and Asia. *Repton 309.*

W S C N E

heterophylla L.*

(= *E. geniculata* J.G. Ortega)

Annual herb, up to 1 m high. Leaves linear to ovate or obovate, margin toothed, upper leaves and bracts green or often purple-spotted, never red. Floral bracts usually ovate, uniformly green. *Flowers green; November to April.* Weed in cultivated land. Native of West Indies, Texas and Mexico. *Hanekom 1329.*

W S C N E

ingens E. Mey. ex Boiss.

(= *E. similis* P.J. Bergius)

Spiny, succulent tree, up to 10 m high. Trunk branching and rebranching into broadly obconic crown of straight, erect or ascending, subparallel branches, all attaining to ± the same level. Segments 37–75 mm. Branches 4-angled. Spine shields separate. *Flowers yellow; April to July.* Bushveld, lowveld, woodland, hills and flats. *Barnard 97.*

W S C N E

knobelii Letty

Spiny, succulent shrub, up to 1 m high. Branches usually 5-angled, marked with green on lighter yellowish green background. Spine shields separate. *Flowers yellow; September to October.* Sourish mixed bushveld, sandstone hills. *Knobel sub PRE 15854.*

W S C N E

knuthii Pax subsp. **knuthii**

Dwarf succulent with branches up to 150 mm long. Main stem neck-like. Branches 3- or 4-angled, pro-

duced from rhizomatous mass of roots, usually with large main tuber, often with plantlets arising at some distance from parent plant. Cymes with 3 cyathia. *Flowers yellow; July.* Lowveld. *Van der Merwe E18.*

W S C N E

kraussiana Bernh. sens. lat.

Perennial herb, up to 1 m high. Leaves cuneately tapering into a ± evident petiole, linear-lanceolate or cuneately oblanceolate, glabrous, up to 90 mm long, 20 mm broad. *Flowers green; December to April.* Forest margins, streambanks. *Meeuse 10169.*

W S C N E

louwii L.C. Leach

Spiny, succulent shrub, up to 1 m high, greyish blue or greenish blue, heavily purple-mottled. Branches 5–7-angled. Spine shields separate, chestnut to purplish, bearing 5 slender, needle-like spines. *Flowers yellow; October.* Bushveld, sandstone and conglomerate hills. *Leach, Louw & Rossouw 15555A.*

W S C N E

lydenburgensis Schweick. & Letty

Succulent shrub, up to 1.5 m high. Branches ascending or erect, up to 15 mm thick, 4-angled. Spine shields continuous. Subordinate prickles minute. Ovary and capsule sessile. *Flowers yellow; June to November.* Bushveld, scrub, rocky situations. *Codd 2976.*

W S C N E

maleolens E. Phillips

Dwarf succulent, up to 120 mm tall. Branches up to 150 mm long or occasionally longer. Peduncles ± 10 mm long, remains of peduncles persistent. *Flowers yellow; August to January.* Woodland. *Van der Merwe 2168.*

W S C N E

monteiroi Hook. f. subsp. **ramosa** L.C. Leach

Dwarf shrub, up to 300 mm tall, with relatively slender, succulent, tuberculate flowering branchlets. Paired bracts often wider than long. Glands red to dark maroon. *Flowers maroon; July to June.* Woodland, bushveld and mopani veld. *Leach & Jones 13246.*

W S C N E

peplus L.

Erect annual herb, up to 300 mm tall. Leaves subsessile or on slender petioles, margin entire, up to 30 mm long, 15 mm broad. Capsule with fleshy ridges along angles. Seeds with rows of deep pits. *Flowers green; October to March.* Weed of cultivation and disturbed ground, in shade. *Matthews 307.*

W S C N E

perangusta R.A. Dyer

Spiny, succulent shrub, up to 1 m high. Branches constricted into segments, 5–7-angled, green with light green bands radiating from centre. Spines in pairs, up to 13 mm long with spine shields forming continuous

horny margin. *Flowers yellow; October.* Turf thornveld, rocky ridges. *Louw 91.*

W S C N E

pseudotuberosa Pax

Perennial herb, up to 250 mm tall. Root tuberous with 1 or more subterranean stems. Leaves sessile, linear or lanceolate, 12,0–37,0 × 1,5–4,0 mm. Processes of involucre glands simple and corrugated on their upper surface. *Flowers green; August to November.* Bushveld. *Germishuizen 3082.*

W S C N E

pubescens Vahl

Erect, perennial herb, up to 1 m high. Leaves of stem sessile, at least half as broad at base as elsewhere, lanceolate or oblanceolate, finely toothed, pilose. *Flowers yellowish green; September to November.* Disturbed places. *Bremekamp sub TRV 29054.*

W S C N E

pulvinata Marloth

Dwarf succulent, up to 300 mm tall, freely branched at ± ground level, with branches regularly and densely packed into cushion-like masses or mounds. Branches 25–33 mm thick, nearly always 7-angled, green. Spines glabrous. *Flowers yellow; July.* Stony mountainsides. *Devenish 12.*

W S C N E

restricta R.A. Dyer

Dwarf, spiny succulent shrub with branches up to 160 mm long. Branches unmarked, yellowish green, 4–6-angled, constricted into segments 10–20 mm long. Spine shields united into continuous horny margin. *Flowers yellow; July to August.* Crevices of dolomite hills. *Codd & De Winter 3092.*

W S C N E

rhombifolia Boiss.

Spineless, much-branched, succulent shrub, up to 0,7 m high. Leaves rudimentary, blade with rhomboid shape. Inflorescences on lateral branchlets as well as on occasional terminal ones. *Flowers yellowish green; October to April.* Dolomite formations. *Van Wyk 293.*

W S C N E

rowlandii R.A. Dyer

Spiny, succulent shrub, up to 2 m high. Branches 5–7-angled, constricted into segments 70–150 mm long. Segments 30–50 mm broad near their base and narrowing gradually upwards. Spine shields united into narrow, continuous, horny margin. *Flowers yellow; July.* Mixed bushveld, sandstone outcrops. *Jones 48.*

W S C N E

schinzii Pax

Dwarf succulent, up to 300 mm tall. Numerous rhizomes and tuberous roots produced below ground. A

compact clump of often rebranching stems produced at ground level. Branches dark green, usually 4-angled. Spine shields dark brown or grey. *Flowers yellowish green; April to September.* Grassland, rocky situations, hillsides, mountainsides. *Van der Schijff 3089.*

W S C N E

sekukuniensis R.A. Dyer

Small, spiny, succulent tree, up to 7 m high. Trunk subcylindric with 8–10 vertical bands of spine shields. Branches up to 1 m long, 15–20 mm thick, obtusely 4- or 5-angled. Flowering branches ascending-spreading. *Flowers yellow; July.* *Zenzinger sub PRE 46644.*

W S C N E

striata Thunb. var. striata

Erect herb, up to 0,6 m high. Stems several, annually produced from perennial rootstock, striate. Leaves linear, alternate, scattered. Bracts of inflorescence half-circular, rhomboid-reniform or rhomboid-ovate. *Flowers green; September to February.* Grassland. *Turner 1110.*

W S C N E

tirucalli L.

Succulent tree, up to 9 m high. Branches alternate, opposite or in clusters. Leafy at apices of flowering shoots only. Leaves linear, 6,0–12,0 × 1,0–1,5 mm. *Flowers yellowish green; September to April.* Bushveld and woodland. *Leach 14129B.*

W S C N E

tortirama R.A. Dyer

Dwarf succulent, up to 300 mm tall, spiny. Root and stem thickened, forming tuberous body up to 300 mm long and 150 mm thick, mostly buried in ground. Branches 3-angled, strongly spirally twisted. *Flowers yellow; October to February.* Bushveld. *Soll & Smith sub PRE 21371.*

W S C N E

transvaalensis Schltr.

Spineless shrub, up to 1,5 m high. Branches herbaceous when young, becoming woody and hollow with age, repeatedly forked or whorled. Leaves scattered or whorled near ends of branches, up to 150 mm long. *Flowers green; October to January.* Bushveld and woodland. *Hardy 5110.*

W S C N E

triangularis Desf. ex A. Berger

Succulent tree, up to ± 18 m high, spiny. Secondary branches deciduous with age leaving naked stems, constricted into segments, light green to yellowish green, segments 75–300 mm long. Spine-shields usually separate. Spines in pairs, 8–18 mm apart. Cymes 2 or 3 together from a flowering-eye. *Flowers yellow; July.* Woodland. *Liebenberg sub PRE 56668.*

W S C N E

trichadenia Pax

Perennial herb, up to 100 mm tall. Main root tuberous. Leaves sessile, linear, 18–60 × 1–5 mm. Processes of involucre glands branched and not corrugated on their upper surface. *Flowers green; May to January.* Bushveld. *Barker 790.*

W	S	C	N	E
---	---	---	---	---

vandermerwei R.A. Dyer

Dwarf succulent, up to 200 mm tall. Cyathia reduced to 1 on each peduncle. Involucre with lobes and glands pink. Branches tufted, 4- or 5-angled, 15–25 mm thick. *Flowers pinkish red; November to December.* Bushveld, granite outcrops. *Kluge 2308.*

W	S	C	N	E
---	---	---	---	---

waterbergensis R.A. Dyer

Spiny, succulent shrub, up to 1.5 m high. Branches dark green, constricted into segments 20–200 mm long, 4–6-angled with continuous horny, grey margin along angles. Cymes usually consisting of 4 cyathia. *Flowers yellow; April to May.* Bushveld, rocky, quartzite ridges. *Codd & Ehrens 4018.*

W	S	C	N	E
---	---	---	---	---

zoutpansbergensis R.A. Dyer

Spiny, succulent shrub or small tree, up to 5 m high. Branches ascending and spreading, constricted into segments at intervals 50–100 mm long, 5–7-angled, segments 20–35 mm long. *Flowers yellow.* Bushveld. *Van der Merwe 1369.*

W	S	C	N	E
---	---	---	---	---

Flueggea Willd. (s. Afr.: 2 spp.) 4298000

Meyer. 1973. F.S.W.A. 67: 2.
Coates Palgrave. 1977. Trees of southern Africa: 396–397.
Webster. 1984. Allertonia 3,4: 259–312.

virosa (Roxb. ex Willd.) Voigt subsp. virosa
(= *Securinega virosa* (Roxb. ex Willd.) Pax & K. Hoffm.)

Many-stemmed shrub up to 2 m high or small tree up to 4 m high. Leaves simple, crowded along branchlets, elliptic to obovate, usually 25 × 15 mm, thinly textured. Fruit small, ± 4 mm in diameter, dull white when mature, spherical. *Flowers creamy green; September to December.* Woodland, forest margins, rocky outcrops, termite mounds. *Herman 143, Oates 36.*

W	S	C	N	E
---	---	---	---	---

Hymenocardia Wall. ex Lindl.
(s. Afr.: 1 sp.) 4325000

Coates Palgrave. 1977. Trees of southern Africa: 404–405.

ulmoides Oliv.
(= *H. capensis* Hutch.,
= *H. ulmoides* Oliv. var. *capensis* (Hutch.) Pax)

Shrub or small tree, up to 6 m high. Male flowers in spikes barely 10 mm long. Fruit with rose-coloured

wing extending all around fruit except for narrow apical notch. *Flowers pink or green; October to April.* Woodland, riverine forest, among rocks. *Bredenkamp 1931.*

W	S	C	N	E
---	---	---	---	---

Jatropha L. (s. Afr.: 20 spp.) 4433000

Prain. 1925. F.C. 5,2: 418–427.
Radcliffe-Smith. 1987. F.T.E.A. Euphorbiaceae: 343–345.

erythropoda Pax & K. Hoffm.

Perennial herb, up to 150 mm tall. Stems tufted at apices. Leaves shortly petioled, runcinate-pinnatifid. Sepals with hyaline denticulate edges. *Flowers white or pale yellow; November to March.* Bushveld, sandveld and woodland. *Hardy 6290.*

W	S	C	N	E
---	---	---	---	---

gossypifolia L.*

Shrub or small tree, up to 3 m high. Leaves palmately lobed, petioles with gland-tipped hairs along their entire length. *Flowers red; January.* Kloofs. Native of America and tropical Africa. *Gertenbach 5475.*

W	S	C	N	E
---	---	---	---	---

hirsuta Hochst. var. hirsuta

Perennial herb, up to 0.7 m high. Stems leafy. Leaves sessile, subobovate or elliptic, margin closely and minutely glandular-denticulate, villous on both surfaces with soft, white, spreading hairs. *Flowers yellow; November.* Woodland, bushveld, grassland, among rocks. *Germishuizen 3350.*

W	S	C	N	E
---	---	---	---	---

hirsuta Hochst. var. oblongifolia Prain

Perennial herb, up to 300 mm tall. Leaves hirsute, oblong, 60–100 × 30–40 mm. Stipules dissected, persistent, lobules gland-tipped. Cocco hirsute. *Flowers yellow; September to January.* Bushveld and woodland. *Comins 881.*

W	S	C	N	E
---	---	---	---	---

lagarinthoides Sond.

Perennial herb, up to 200 mm tall. Leaves glabrous, ovate-lanceolate to linear-lanceolate, much longer than broad, entire. Margins of bracts and sepals closely glandular-denticulate. *Flowers yellow; September to November.* Grassland. *Van Rooyen 2091.*

W	S	C	N	E
---	---	---	---	---

latifolia Pax var. latifolia

Perennial herb, up to 300 mm tall. Leaves sessile, oblong or ovate, acute, base rounded, margin closely and minutely glandular-denticulate, glabrous. *Flowers dark pink or purple; September to March.* Woodland and grassland. *Jordaan 780.*

W	S	C	N	E
---	---	---	---	---

latifolia Pax var. angustata Prain

Perennial herb, up to 400 mm tall. Leaves sessile, narrowly lanceolate, acute, base rounded or truncate, margin closely and minutely glandular-denticulate, 50–90 × 8–10 mm. *Flowers yellow; August to January.* Pine plantations. *Venter 4409.*

W	S	C	N	E
---	---	---	---	---

latifolia Pax var. swazica Prain

Perennial herb, up to 500 mm tall. Leaves sessile, obovate, obtuse or subacute, base somewhat cuneate, margin entire or sparingly and minutely glandular-denticulate, 60–100 × 30–40 mm. *Flowers white; October to November.* Mopani veld, grassy slopes. *Codd 8036.*

W	S	C	N	E
---	---	---	---	---

schlechteri Pax sens. lat.

Perennial herb, up to 300 mm tall. Leaves distinctly petioled, tip of lobes and lobules obtuse, denticulate. Cymes considerably overtopping leaves. Petals glabrous outside. *Flowers orange-red; November to January.* Bushveld and mopani veld. *Codd 2332.*

W	S	C	N	E
---	---	---	---	---

spicata Pax

(= *J. messinica* E.A. Bruce)

Softly woody herb or subshrub, up to 2 m high. Leaves usually deeply 3–5(–7)-lobed, lobes unevenly serrate. Stipules herbaceous. Fruit septically dehiscent. *Flowers creamy brown; September to June.* Bushveld, grassland, rocky hillsides, heavy black clay. *Raal 683.*

W	S	C	N	E
---	---	---	---	---

variifolia Pax

Shrub, up to 1.5 m high. Leaves widely ovate or oblong, nearly as broad as long, 3-lobed, less often 5-lobed or entire, petioles up to 70 mm long. *Flowers greenish cream; November to March.* Woodland, mopani veld, rocky slopes. *Leach & Bayliss 13252.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond. var. zeyheri

Perennial herb, up to 300 mm tall. Stems and leaves pilose. Leaves spuriously subpalmately lobed, marginal glands short-stalked. Cymes hardly overtopping leaves. *Flowers yellowish white; September to May.* Woodland, bushveld and grassland. *Venter 11176.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond. var. subsimplex Prain

Perennial herb, up to 400 mm tall. Leaves almost all entire, ovate or ovate-lanceolate, acute, pilose, margin with stalked glands. Stipules dissected. *Flowers pale yellow; November to March.* Bushveld and grassland. *Germishuizen 751.*

W	S	C	N	E
---	---	---	---	---

Leidesia Müll. Arg. (s. Afr.: 1 sp.) 4372000

Pax. 1914. *Pflanzenreich* 63: 284.
Prain. 1925. *F.C.* 5,2: 463.

procumbens (L.) Prain

(= *L. capensis* (Sond.) Müll. Arg.,
= *L. obtusa* (Thunb.) Müll. Arg.)

Succulent herb, up to 250 m tall. Leaves long-petioled, very thinly membranous, deltoid-ovate, margin shallowly crenate, lobes 4 or more a side, sparingly pubescent above. *Flowers green; January to February.* Forest. *Scheepers 589.*

W	S	C	N	E
---	---	---	---	---

Margaritaria L.f. (s. Afr.: 1 sp.) 4299020

Webster. 1979. *J. Arnold Arbor.* 60,4: 403–444.

discoidea (Baill.) Webster var. nitida (Pax) Radcl.-Sm.

(= *Phyllanthus amapondensis* Sim,
= *P. discoideus* (Baill.) Müll. Arg.)

Shrub or small tree, up to 4 m high. Petiole adaxially grooved. Fruit moderately to shallowly 3-lobate. Distal stipules usually 2–5 mm. Fruiting pedicels longer than 5 mm. *Flowers greenish yellow; October to November.* Forest, woodland, thickets, disturbed places. *Germishuizen 3052.*

W	S	C	N	E
---	---	---	---	---

Micrococca Benth. (s. Afr.: 2 spp.) 4367000

Prain. 1925. *F.C.* 5,2: 460–461.
Coates Palgrave. 1977. *Trees of southern Africa:* 421–422.

capensis (Baill.) Prain

Tall shrub or small tree, up to 5 m high. Leaves simple, broadly elliptic to narrowly elliptic, 40–140 × 20–55 mm, very dark green, upper surface harshly hairy and rough to the touch. Racemes axillary. *Flowers green; August to May.* Evergreen forest. *Van Wyk & Theron 4538.*

W	S	C	N	E
---	---	---	---	---

Monadenium Pax (s. Afr.: 1 sp.) 4503000

Bally. 1961. *Monadenium:* 56.

lugardiae N.E. Br.

Succulent. Stems 120–600 mm long. Leaves spaced on upper portion of stems or in terminal tuft, obovate, margin crisped-crenulate or serrulate. *Flowers pale green and yellow to orange-brown; November to May.* Lowveld bush, bushveld, rocky hillsides. *Hardy 5531.*

W	S	C	N	E
---	---	---	---	---

Phyllanthus L. (s. Afr.: 24 spp.) 4299000

Hutchinson. 1925. *F.C.* 5,2: 386–401.
Meyer. 1973. *F.S.W.A.* 67: 12.
Radcliffe-Smith. 1987. *F.T.E.A. Euphorbiaceae* 1: 9–63.

angolensis Müll. Arg.

Herb, up to 300 mm tall. Leaf blades elliptic-ovate to narrowly elliptic, (2-)3-6(-8) mm. Sepals 5, or rarely 6 in male flowers. Stamens 5, free. Female disc annular. *Flowers cream-coloured; February to May.* Woodland. *Van Wyk 4018.*

W	S	C	N	E
---	---	---	---	---

asperulatus Hutch.

Perennial herb, up to 500 mm high. Branchlets finely asperulate. Leaves mostly $\pm$ 10 mm long. *Flowers yellowish green; February to March.* Woodland. *Gerstenbach 5072.*

W	S	C	N	E
---	---	---	---	---

burchellii Müll. Arg.

Annual herb, up to 250 mm tall. Branchlets and leaves quite smooth. Leaves oblong-lanceolate, 6-10 $\times$ 2-3 mm, glabrous, glaucous-green on upper surface when dry. *Flowers yellowish red; July to May.* Woodland, grassland, stony hillsides. *Krynauw 670.*

W	S	C	N	E
---	---	---	---	---

glaucophyllus Sond.

Perennial herb, up to 250 mm tall. Stems numerous. Leaves ovate to ovate-elliptic, 6-10 $\times$ 4-6 mm, base cordate, appressed, glabrous and glaucous on both surfaces. *Flowers yellowish green; November to March.* Grassland, rocky slopes. *Germishuizen 3742.*

W	S	C	N	E
---	---	---	---	---

incurvus Thunb.

Perennial herb, up to 300 mm tall. Many-stemmed from woody rootstock. Leaves linear, usually long and very narrow, without visible nerves. *Flowers yellowish red; October to March.* Woodland and bushveld. *Codd & De Winter 4942.*

W	S	C	N	E
---	---	---	---	---

macranthus Pax

Erect shrub, up to 1.5 m high. Leaf blades obovate, elliptic or suborbicular, 3-9(-12) $\times$ 2-6(-8) mm. Flowering branchlets angular, smooth or asperulate, 6-8(-14)-leaved. *Flowers greenish white; October to February.* Woodland, sandveld, rocky slopes. *Codd & Dyer 4540.*

W	S	C	N	E
---	---	---	---	---

maderaspatensis L.

Perennial herb, up to 300 mm tall. Leaves linear-lanceolate or oblanceolate, up to 30 mm long and 7 mm broad, lateral nerves prominent below, appressed. *Flowers yellowish green; November to June.* Woodland, grassland, mopani veld, among rocks. *Retief 234.*

W	S	C	N	E
---	---	---	---	---

meyerianus Müll. Arg.

Perennial herb, up to 500 mm high. Stems erect from rhizome. Lateral flowering branchlets numerous. Leaves ovate-elliptic, rounded at both ends. *Flowers*

yellowish green; December to May. Grassland. *Scheepers 186.*

W	S	C	N	E
---	---	---	---	---

nummulariifolius Poir.

Erect, woody herb or shrublet, up to 500 mm tall. Lateral branches modified to resemble pinnate leaves and subtended by scale-like cataphylls. Leaf blades usually suborbicular-obovate. *Flowers white; October to February.* Woodland, wooded grassland and forest edges. *Venter 7116.*

W	S	C	N	E
---	---	---	---	---

parvulus Sond.

Annual herb, up to 250 mm tall. Branchlets and often leaves on both sides finely scabrid-puberulous, branchlets crowded. Leaves ovate-elliptic, appressed. *Flowers creamy red; November to May.* Bushveld, grassy slopes. *Westfall 1530.*

W	S	C	N	E
---	---	---	---	---

pentandrus Schumach. & Thonn.

Erect, annual herb, up to 360 mm tall. Flowering branches conspicuously flexuous. Leaves oblong-lanceolate or linear-lanceolate, thin, glabrous on both surfaces. *Flowers yellowish red; December to May.* Bushveld. *Germishuizen 3686.*

W	S	C	N	E
---	---	---	---	---

pinnatus (Wight) Webster

(= *P. kirkianus* Müll. Arg.)

Many-stemmed shrub, up to 3 m high. Lateral branches modified to resemble pinnate leaves. Leaves yellowish green. Male flowers densely fasciculate. Fruits 8-10 mm in diameter, on slender stalk. *Lang sub TRV 32309.*

W	S	C	N	E
---	---	---	---	---

reticulatus Poir.

Scandent shrub, up to 4 m high. Branchlets smooth or very slightly verrucose. Flowering branchlets produced in axil of flowerless leafy shoot. Leaves oblong or elliptic. *Flowers yellowish red; July to September.* Riverbanks and streambanks. *Van der Schijff 521.*

W	S	C	N	E
---	---	---	---	---

Pseudolachnostylis Pax (s. Afr.:

2 spp.)

4295000

Meyer. 1973. F.S.W.A. 67: 13.

maprouneifolia Pax sens. lat.

Deciduous tree, up to 18 m high. Young shoots and leaves quite glabrous. Leaves simple, ovate to almost circular, green to bluish green above. Fruit spherical, 20 mm or more in diameter, pale yellow when mature. *Flowers greenish yellow; October to November.* Woodland, bushveld, disturbed places. *Straub 219.*

W	S	C	N	E
---	---	---	---	---

Pterococcus Hassk. (s. Afr.: 1 sp.) 4421000

Meyer. 1968. F.S.W.A. 67: 14.

africanus (Sond.) Pax & K. Hoffm.(= *Plukenetia africana* Sond.,
= *Plukenetia hastata* Müll. Arg.)Perennial, twining herb. Leaves lanceolate, acuminate, base hastate, margin serrate. Fruit 4-loculed. *Flowers green; January.* Grassland and woodland. *Van Wyk 784.*

W S C N E

Ricinus L. (s. Afr.: 1 sp.) 4424000

Prain. 1925. F.C. 5,2: 487.

Henderson & Anderson. 1966. Common weeds in South Africa: 206–207.

communis L.*Herbaceous, much-branched shrub or small tree, up to 4 m high. Leaves palmately 7–13-lobed, lobes serrate. Fruit subglobose, ellipsoid or oblong, 10–15 mm long, usually echinate. *Flowers yellow; November to May.* Woodland, bushveld, disturbed areas, streambanks. Native to Africa and India. *Stalmans 628.*

W S C N E

Sapium P. Browne (s. Afr.: 2 spp.) 4483000

Léonard. 1959. Bull. Jard. bot. Etat Brux. 29,2: 141–142.

Coates Palgrave. 1977. Trees of southern Africa: 436–437.

ellipticum (Krauss) Pax(= *S. mannianum* (Müll. Arg.) Benth.)Tree, up to 12 mm high. Fruits 2-lobed, reluctantly dehiscent, without horns but usually crowned with remains of persistent styles. *Flowers yellow; November to April.* Forest margins, wooded ravines. *Witwater sub PRE 45570.*

W S C N E

Spirostachys Sond. (s. Afr.: 1 sp.) 4478000

Prain. 1925. F.C. 5,2: 512–513.

Coates Palgrave. 1977. Trees of southern Africa: 435–436.

Van Wyk. 1984. Field guide to the trees of the Kruger National Park: 132.

africana Sond.Tree, up to 10 m high. Leaves ovate to elliptic, 25–70 × 18–35 mm, with 2 glands at junction with petiole. Inflorescences slender catkin spikes. *Flowers brown; August to May.* Bushveld, along rivers and streams. *Powrie 434.*

W S C N E

Suregada Roxb. ex Rottler (s. Afr.: 3 spp.) 4464000

Léonard. 1958. Bull. Jard. bot. Etat Brux. 28: 446–447.

Coates Palgrave. 1977. Trees of southern Africa: 433–434.

africana (Sond.) Kuntze(= *Gelonium africanum* (Sond.) Müll. Arg.)Tree, up to 6 m high. Leaves oblanceolate to obovate, up to 50 × 30 mm, pellucid gland-dotted, apex rounded, margin scalloped. Flowers in clusters. *Flowers yellow to greenish white; August to March.* Bushveld and evergreen forest. *Theron 1879.*

W S C N E

procera (Prain) Croizat(= *Gelonium procereum* Prain)Tree, up to 9 m high. Leaves elliptic to oblanceolate, 25–110 × 13–55 mm, apex acute to rounded, margin entire or obscurely serrate. Fruit a 3-lobed capsule, up to 8 × 10 mm. *Flowers white to green; September to November.* Evergreen forest. *Hemm 364.*

W S C N E

Synadenium Boiss. (s. Afr.: 1 sp.) 4500000

Prain. 1925. F.C. 5,2: 220–221.

Coates Palgrave. 1977. Trees of southern Africa: 453–454.

cupulare (Boiss.) L.C. Wheeler(= *S. arborescens* Boiss.)Shrub or small tree, up to 5 m high. Leaves obovate, 15–100 × 20–60 mm, deciduous, midrib prominent and tinged with purple or red. Flowers in terminal or axillary spreading heads. *Flowers yellowish green; April to June.* Woodland, thicket, rocky outcrops. *Codd 5513.*

W S C N E

Tragia L. (s. Afr.: 14 spp.) 4416000

Prain. 1925. F.C. 5,2: 502–511.

Meyer. 1968. F.S.W.A. 67: 20.

Radcliffe-Smith. 1987. Kew Bull. 42,2: 397.

dioica Sond.(= *T. schinzii* Pax)Perennial herb, up to 250 mm tall. Stems erect or ascending. Leaves acute, petioled, 20 mm long or longer, lanceolate with 2 large rounded basal lobes. *Flowers green; November to January.* Grassland. *Phalatsé 179.*

W S C N E

incisifolia PrainHerb, up to 300 mm tall. Stems annual from woody rootstock. Leaves sessile, deeply laciniately lobed. Male flowers solitary in each bract. Racemes usually 2-sexual. *Flowers greenish yellow; November to April.* Grassland. *Nel 5557.*

W S C N E

minor Sond.

Perennial herb, up to 200 mm tall. Stems erect. Leaves short-petioled, oblong-lanceolate to lanceolate, closely

serrate. Male flowers solitary to each bract. Racemes usually 2-sexual. *Flowers greenish yellow; August to March.* Grassland. *Codd 2119.*

W S C N E

okanyua Pax

Small creeper. Stems with stinging bristles. Leaves ovate, base auriculate-subcordate, petiole 20 mm long or longer. Female calyx segments 2- or 3-lobulate on each side. *Flowers yellow; January to May.* Riverine scrub, riverbanks. *Van der Schijff 1863A.*

W S C N E

physocarpa Prain

Perennial herb, up to 300 mm tall, pubescent and copiously armed with stinging bristles. Stems erect. Leaves triangular-ovate, base cordate. *Flowers green; December to February.* Grassland. *Pole-Evans 433.*

W S C N E

prionoides Radcl.-Sm.

Climber. Leaves triangular-ovate, 20–120(–160) × 10–90(–120) mm, acute, coarsely serrate, greyish tomentose, venation prominent beneath. Stinging hairs virulent. *Flowers green; February.* Fringing forest, kloofs, wooded cliffs among granite boulders. *Acocks 12356.*

W S C N E

rogersii Prain

Perennial herb, up to 300 mm tall. Stems erect, pubescent but without stinging hairs. Leaves sessile, base truncate or rounded. *Flowers yellowish green; September to December.* Grassland. *Onderstall 1255.*

W S C N E

rupestris Sond.

Perennial herb. Stems erect and much virgately branched below, twining upwards. Leaves ovate-lanceolate, auriculate-cordate, densely clothed with stinging hairs on nerves. *Flowers green; November.* Bushveld, streambanks, sandy soil. *Zambatis 1113.*

W S C N E

Tragiella Pax & K. Hoffm. (s. Afr.: 1 sp.)

4416020

Croizat. 1941. J. Arnold Arbor. 22: 430.

Radcliffe-Smith. 1987. F.T.E.A. Euphorbiaceae: 318.

natalensis (Sond.) Pax & K. Hoffm.

(= *Sphaerostylis natalensis* (Sond.) Croizat,

= *Tragia natalensis* Sond.)

Creeping or scandent perennial herb, up to 3 m high, patently pubescent and urticating. Leaves long-petioled, membranous, ovate or ovate-oblong, acuminate, margin closely and sharply serrate. *Flowers green; November to January.* Forest margins. *Scheepers 1045.*

W S C N E

FABACEAE

Trees, shrubs or herbs; sometimes armed with prickles or spines. Leaves alternate, simple or usually variously compound, with stipules. Flowers regular or irregular, sometimes large and showy. Sepals in regular flowers (3)4 or 5(6), connate or free, in irregular flowers (4)5, free or connate into toothed or lobed calyx. Petals 5, corolla of irregular flowers usually of 5 unequal petals, upper one large and conspicuous (standard), the 2 side ones small and stalked (wings), the 2 basal ones united into boat-shaped structure (keel). Stamens twice as many as petals, sometimes more. Ovary superior, 1-locular. Fruit a pod.

Key to subfamilies after Ross in F.S.A. 16,1: 1 (1975).

- 1a Flowers regular, petals valvate in bud, often united basally; sepals usually united basally; stamens as many as petals or twice as many or numerous, free or all united into a tube or to base of petals; leaves bipinnate or, rarely, pinnate in indigenous species; seeds normally with an areole on each face or side Mimosoideae
- 1b Flowers nearly always zygomorphic; petals imbricate in bud, free or some of them united; seeds usually without an areole 2
- 2a Adaxial (uppermost) petal overlapped by adjacent lateral petals when these are present; sepals often free; stamens 10 or fewer or occasionally more, free or less often, variously united; leaves bipinnate or pinnate, rarely simple or 1-foliolate; seeds with radicle usually straight Caesalpinoideae
- 2b Adaxial (uppermost) petal outside adjacent lateral petals; sepals united basally; stamens 10 or rarely fewer, sometimes free, most often adaxial free or nearly so and the other 9 united, sometimes united into 2 groups of 5 or all united; leaves never bipinnate; seeds with radicle usually curved Papilionoideae

Caesalpinioideae

Key to genera of subfamily Caesalpinioideae after Dyer, Gen. 1: 219–220 (1975) and Lock in Kew Bull. 43: 333–342 (1988).

- 1a Leaves once-pinnate, rarely subdigitate, sometimes reduced to 1 leaflet or subsimple or deeply lobed 2
- 1b Leaves twice-pinnate, sometimes at first pinnate and later bipinnate 15
- 2a Petals absent 3
- 2b Petal or petals present 5
- 3a Leaves imparipinnate; stamens many, inserted in throat of calyx tube **Cordyla**
- 3b Leaves 2-foliate; anthers dorsifixed 4
- 4a Stamens 20–25; ovule 1; fruit compressed, kidney-shaped **Colophospermum**
- 4b Stamens 8–12; ovules 4; fruit suborbicular to obliquely elliptic, flat or dilated, unilaterally winged **Guibourtia**
- 5a Anthers opening by terminal or basal pores or occasionally by short slits, attached at or near base 6
- 5b Anthers opening by longitudinal slits, often $\pm$ versatile 8
- 6a Filaments of 3 adaxial stamens sigmoidally incurved, many times longer than their small anther; anthers dehiscent by basal pores; seed coat smooth, without areoles **Cassia**
- 6b Filaments of all stamens straight, usually shorter or not more than twice as long as their anther 7
- 7a Bracteoles 2; pod elastically dehiscent, valves coiling at or after dehiscence; seed coat without areoles; mostly herbs **Chamaecrista**
- 7b Bracteoles 0; pod either indehiscent or breaking inelastically through one or both sutures; seed coat often with closed areole on each face or margin **Senna**
- 8a Fertile stamens 2 or 3 9
- 8b Fertile stamens 5 or more 12
- 9a Herbaceous, trailing or climbing **Tylosema**
- 9b Trees 10
- 10a Leaves pinnate; seeds with large, often brightly coloured aril; 1 petal developed **Afzelia**
- 10b Leaves simple, but often deeply lobed 11
- 11a Flowers bisexual; corolla elongated, whitish to light rose; calyx split down one side **Bauhinia**
- 11b Flowers unisexual, dioecious; corolla white; pod many-seeded, velvety rust-coloured; tree or shrub up to 9 m tall **Piliostigma**
- 12a Petals: 1 developed and conspicuous, others rudimentary; seeds with large aril **Afzelia**
- 12b Petals equal or subequal in size 13
- 13a Leaves pinnate; flowers red **Schotia**
- 13b Leaves simple, usually deeply bilobed 14
- 14a Calyx spatheaceous, splitting to base down one side, with sepals $\pm$ fused; flowers bisexual, fertile stamens 1–10; style elongate; pod dehiscent **Bauhinia**
- 14b Calyx turbinate, with 4 or 5 short, broad lobes; flowers unisexual, dioecious; male flowers with 10 fertile stamens; female flowers with thick, sessile stigmas; pod indehiscent **Piliostigma**
- 15a (1) Calyx lobes valvate 16
- 15b Calyx lobes or teeth imbricate 17
- 16a Herbs or undershrubs, often glandular; inflorescence a raceme, terminal or leaf-opposed; ovules few to many **Hoffmannseggia**
- 16b Tree with rusty-tomentose branchlets; flowers white, small, in interrupted spikes; anthers with sessile, apical gland; ovary 1-ovuled **Burkea**
- 17a Leaf rhachis short, flat and leaf-like, ending in a sharp, spine-like point; leaflets very small; fruits linear, torulose **Parkinsonia**
- 17b Leaf rhachis not flat nor ending in a spine-like point 18
- 18a Branches and leaf rhachis unarmed 19
- 18b Branches and leaf rhachis prickly 20
- 19a Fruit dehiscent, not winged; herbs or shrublets, often glandular **Hoffmannseggia**
- 19b Fruit indehiscent, flat, compressed and $\pm$ winged, not divided within; trees **Peltophorum**
- 20a Fruit samaroid with single seed at base and obliquely winged above **Pterolobium**
- 20b Fruit solid, often filled with pulp between seeds; ovary sessile, ovules few to several **Caesalpinia**

Afzelia Sm. (s. Afr.: 1 sp.)

3509000

Ross. 1977. F.S.A. 16,2: 40–43.

quanzensis Welw.

(= *A. petersiana* Klotzsch)

Deciduous tree, up to 20 m high. Pods obliquely oblong, 70–180(–295) $\times$ 45–65(–90) mm, compressed. Seeds black, with an orange, red or vermillion, cup-

shaped basal aril. *Flowers green and dark red; October.* Woodland, forest and bushveld. *Lang sub TRV 32092.*

W S C N E

Bauhinia L. (s. Afr.: 9 spp.)

3528000

Cotter & Ross. 1977. F.S.A. 16,2: 47–55.

galpinii N.E. Br.

(= *B. punctata* Bolle,
= *Perlebia galpinii* (N.E. Br.) A. Schmitz)

Spreading shrub, up to 4 m high. Leaves 2-lobed. Fertile stamens 3–6. Petals with conspicuous basal claw, almost as long as lamina. Pods linear-oblong, 50–140 × 20–30 mm. *Flowers pinkish red to brick-red; July to June.* Bushveld and scrub. *Herman 150.*

W	S	C	N	E
---	---	---	---	---

petersiana Bolle subsp. **macrantha** (Oliv.) Brummitt & J.H. Ross

(= *B. petersiana* Bolle subsp. *serpae* (Ficalho & Hiern) Brummitt & J.H. Ross)

Shrub or tree, up to 10 m high. Hairs on lower surface of leaves curved or spreading but not appressed. Inflorescence 1–3(4)-flowered. Hypanthium longer than 20 mm. Flower buds densely brown-puberulous. *Flowers white; October to January.* Sandveld, bushveld and thornveld. *Codd 2297.*

W	S	C	N	E
---	---	---	---	---

tomentosa L.

(= *B. tomentosa* L. var. *glabrata* Hook. f.,
= *Pauletia tomentosa* (L.) A. Schmitz)

Shrub or tree, up to 8 m high. Fertile stamens 10. Petals: 1–3 often (not always) with dark brown or purplish basal blotch. Pods linear-oblong, glabrescent to densely tomentose. *Flowers sulphur-yellow; November to May.* Bushveld and woodland. *Vorster 2828 & Codd 6696.*

W	S	C	N	E
---	---	---	---	---

Burkea Benth. (s. Afr.: 1 sp.)

3474000

Ross. 1977. F.S.A. 16,1: 15–16.

africana Hook.

(= *B. africana* Hook. var. *andongensis* Oliv.,
= *B. africana* Hook. var. *cordata* Welw. ex Oliv.)

Tree, up to 15 m high. Branchlets rusty tomentose, with leaves clustered towards ends. Leaflets 5–15 per pinna, elliptic, basally asymmetric. Inflorescence spicate, spike 80–250 mm long. *Flowers white, cream or pale green; October.* Sandy soils in deciduous woodland and bushveld. *Steynberg 732.*

W	S	C	N	E
---	---	---	---	---

Caesalpinia L. (s. Afr.: 8 spp.)

3559000

Ross. 1977. F.S.A. 16,2: 122–130.

decapetala (Roth) Alston*

(= *C. sepiaria* Roxb.,
= *Reichardia decapetala* Roth)

Climbing or straggling bushy shrub, up to 8 m high. Stems armed. Leaves 2-pinnate; leaflets (8–)10–20 mm long, without gland-dots. Stipules asymmetrically ovate, 4–20 × 2–8 mm. Pods 60–95 mm long. *Flowers pale yellow; April to September.* Forest margins, river-

banks, scrub and grassland. Native to Europe and Asia. *Burt Davy 279.*

W	S	C	N	E
---	---	---	---	---

rostrata N.E. Br.

Scrambling shrub, up to 3 m high. Leaves 2-pinnate; pinnae 3–7 pairs per leaf; leaflets 6–11 pairs per pinna, 3–11 × 2–5 mm. Lower sepal with an apical upwardly curved rostrate beak 2,5–4,0 mm long. *Flowers purplish pink; May.* Kloofs. *Nel 5110.*

W	S	C	N	E
---	---	---	---	---

Cassia L. emend. Gaertn. (s. Afr.: 1 sp.) 3536000

Gordon-Gray. 1977. FSA 16,2: 73–77.

abbreviata Oliv. subsp. **beareana** (Holmes) Brennan

(= *C. beareana* Holmes,
= *C. granitica* Baker f.)

Tree, up to 13 m high. Flowers usually produced before leaves. Pods cylindrical, up to 0,9 m long, persisting on plant long after leaves have been shed. *Flowers creamy yellow; August to November.* Lowveld bush and open savanna, koppies and riverbanks. *Codd 6127.*

W	S	C	N	E
---	---	---	---	---

Chamaecrista Moench (s. Afr.: 8 spp.) 3536010

Gordon-Gray. 1977. F.S.A. 16,2: 69–108.
Lock. 1988. Kew Bull. 43: 333–342.

absus (L.) Irwin & Barneby

(= *Cassia absus* L.)

Semi-erect herb, up to 0,6 m high, glandular, viscid. Leaves with 2 pairs of leaflets only. Flowers 5–6 mm long. Pods oblong-linear, 30–555 × 5–8 mm, valves setose to pilose with scattered, rather stiff, glandular-based hairs. *Flowers yellow; December to May.* Disturbed grassland, open patches in forest and roadsides. *Herman 178.*

W	S	C	N	E
---	---	---	---	---

biensis (Steyaert) Lock

(= *Cassia biensis* (Steyaert) Mendonça & Torre,
= *Cassia katangensis* (Ghesq.) Steyaert var. *biensis* Steyaert)

Perennial herb with several prostrate or decumbent, occasionally semi-erect to erect stems, up to 450 mm tall. Petiolar gland raised on an indistinct stalk 0,1–0,3 mm long or sessile. Petals obovate, 4–7 mm long. *Flowers bright yellow; October to April.* Grassland and sandy soil. *Stalmans 379.*

W	S	C	N	E
---	---	---	---	---

capensis (Thunb.) E. Mey. var. **capensis**

(= *Cassia capensis* Thunb. var. *capensis*)

Perennial herb with prostrate, semi-erect or erect stems, up to 300 mm tall. Stems usually with appressed or short, patent hairs. Leaflets narrower than 2,3 mm;

petiolar gland slightly raised, circular. *Flowers yellow; December to January.* Grassland. *Germishuizen 2962.*

W S C N E

capensis (Thunb.) E. Mey. var. **flavescens** (Thunb.) E. Mey.
(= *Cassia capensis* Thunb. var. *flavescens* (E. Mey.) Vogel)

Herb, up to 0,9 m high. Stems with appressed and/or short patent hairs with many long hairs interspersed. Petiolar gland often obsolete or wanting. *Flowers yellow; November to March.* Savanna, rocky soil. *Germishuizen 747.*

W S C N E

comosa E. Mey. var. **capricornia** (Steyaert) Lock
(= *Cassia comosa* (E. Mey.) Vogel var. *capricornia* Steyaert)

Semi-erect herb, up to 0,55 m high. Leaflets in 11–35 pairs, 1,4–3,0 mm wide; gland not completely sunken in channel of adaxial petiolar surface, not separating so widely its margins, usually clearly visible when petiole is viewed from the side. Petals 7,5–10,0 mm long. *Flowers bright yellow; November to March.* Grassland. *Van Rooyen 2238.*

W S C N E

mimosoides (L.) Greene
(= *Cassia mimosoides* L.)

Annual or short-lived perennial herb, up to 1,6 m high, fibrous-rooted. Leaf rhachis with adaxial surface crested. Petals usually 5,0–7,5 mm long. *Flowers pale cream or yellow to bright yellow; January to March.* Weed of disturbed areas. *Stalmans 292.*

W S C N E

plumosa E. Mey. var. **plumosa**
(= *Cassia plumosa* (E. Mey.) Vogel var. *plumosa*)

Prostrate herb. Stems glabrous, glabrescent, puberulous or pubescent with curved, appressed hairs. Leaflets glaucous. *Flowers deep yellow; February.* Grassland, gravelly soil. *Leach 12073.*

W S C N E

plumosa E. Mey. var. **erecta** (Schorn & Gordon-Gray) Lock
(= *Cassia plumosa* (E. Mey.) Vogel var. *erecta* Schorn & Gordon-Gray)

Plant erect, branching only above middle to form a narrow, rather spindly subshrub up to 2,5 m high. Stems villous, velutinous or pubescent. Leaves not glaucous, often yellowish green. *Flowers yellow; December.* Arid lowveld, disturbed open bush. *Retief 518.*

W S C N E

stricta E. Mey.
(= *Cassia quarrei* (Ghesq.) Steyaert,
= *Cassia stricta* (E. Mey.) Steud.)

Erect, robust, closely leafy annual herb. Leaflets with main vein ± centrally placed; petiolar gland projecting from petiole. *Flowers pale yellow; December to March.* Grassland, streambanks. *Germishuizen 3910.*

W S C N E

Colophospermum J. Kirk ex J. Léonard
(s. Afr.: 1 sp.) 3490010

Ross. 1977. F.S.A. 16,2: 16–19.

mopane (J. Kirk ex Benth.) J. Kirk ex J. Léonard
(= *Copaiba mopane* (J. Kirk ex Benth.) Kuntze,
= *Copaifera mopane* J. Kirk ex Benth.)

Small to medium-sized tree or shrub, up to 12 m high. Leaves with single pair of large leaflets; leaflets articulated basally, asymmetric, semicordate-ovate, 40–90 × 25–50 mm. Pods yellowish brown, compressed, reniform with numerous, scattered resin glands. *Flowers greenish white or greenish yellow; January to February.* Mopani veld. *Codd 4827.*

W S C N E

Cordyla Lour. (s. Afr.: 1 sp.) 3573000

Ross. 1977. F.S.A. 16,2: 133–135.

africana Lour.

Unarmed, deciduous tree, up to 23 m high. Leaves imparipinnate; leaflets 11–28, alternate, oblong, (10–)20–40 × (7–)10–20 mm. Fruit ellipsoid, oblong or spherical, 30–80 × 20–60 mm, yellow when ripe. *Flowers bright yellow; September to October.* Riverine forest. *Nel 177.*

W S C N E

Guibourtia J.J. Benn. (s. Afr.: 2 spp.) 3490020

Ross. 1977. F.S.A. 16,2: 19–23.

conjugata (Bolle) J. Léonard
(= *Copaifera conjugata* (Bolle) Milne-Redh.,
= *Gorskia conjugata* Bolle)

Small to medium-sized deciduous tree, up to 12 m high. Leaves with single pair of leaflets; leaflets obliquely ovate, with 3–6 conspicuous basal nerves. Pods brown, stipitate, semi-orbicular, 35–50 × 20–30 mm. *Flowers white or cream; December to January.* Woodland and sandveld. *Fourie & Raal 3286.*

W S C N E

Hoffmannseggia Cav. (s. Afr.: 3 spp.) 3557000

Ross. 1977. F.S.A. 16,2: 117–122.

burchellii (DC.) Benth. ex Oliv. subsp. **burchellii**

Perennial herb with stems short, ± ascending, up to 300 mm long. Leaves with 1 or 2(3) pinnae pairs, glaucous, with orange-coloured glands underneath; terminal pinna usually conspicuously longer than lateral pinnae, with 5–12 pairs of leaflets. *Flowers red, orange, salmon, pink or purple; October to April.* Red sand. *Brueckner 583.*

W S C N E

burchellii (DC.) Benth. ex Oliv. subsp. **rubro-violacea**
(Baker f.) Brummitt & J.H. Ross
(= *H. rubro-violacea* Baker f.)

Decumbent-ascending herb. Stems up to 450 mm long. Leaves with (2)3 or 4 pinnae pairs; terminal pinna not conspicuously longer than lateral pinnae, with 4–6 pairs of leaflets. *Flowers red; October to May.* Sandy flats. *Codd 6595.*

W S C N E

Parkinsonia L. (s. Afr.: 2 spp.) 3551000
Ross. 1977. F.S.A. 16,2: 109–112.

aculeata L.*

Shrub or tree, up to 8 m high. Leaf rachis spinescent; pinnae rachillae up to 400 mm long, laterally winged and thus appearing flattened, usually with numerous opposite or alternate leaflets along each margin. Stipules usually spinescent. *Flowers yellow and orange-red; October to February.* Roadsides. Native to South America. *Zambatis 1242.*

W S C N E

Peltophorum (Vogel) Benth. (s. Afr.: 1 sp.) 3561000
Ross. 1977. F.S.A. 16,2: 130–133.

africanum Sond.
(= *Brasilettia africana* (Sond.) Kuntze)

Unarmed tree, up to 9 m high. Young branchlets and leaves rusty or greyish pubescent or tomentose. Leaflets: 8–22 pairs per pinna. Inflorescences racemose. Pods elliptic, 40–90 × 14–20 mm, acuminate at both ends. *Flowers bright yellow; October to January.* Woodland and bushveld. *Codd 6308.*

W S C N E

Piliostigma Hochst. (s. Afr.: 1 sp.) 3528010
Coetzer & Ross. 1977. F.S.A. 16,2: 58–60.

thonningii (Schumach.) Milne-Redh.
(= *Bauhinia thoningii* Schumach.,
= *Locellaria bauhinioides* Wetw.)

Tree or shrub, up to 10 m high. Leaves 2-lobed, 50–150 × 60–160 mm, densely reticulate and rusty-pubescent beneath. Pods woody, indehiscent, oblong or linear-oblong, 130–200 × 30–60 mm. *Flowers white to pink; December to April.* Woodland. *Stephen 318.*

W S C N E

Pterolobium R. Br. ex Wight & Arn.
(s. Afr.: 1 sp.) 3553000
Ross. 1977. F.S.A. 16,2: 114–117.

stellatum (Forssk.) Brenan
(= *Mimosa stellata* Forssk.,
= *Pterolobium exosum* (J.F. Gmel.) Baker f.)

Scrambling or climbing shrub, up to 15 m high, armed with prickles. Racemes 50–180 mm long, terminal and axillary, aggregated into panicles up to 350 mm long, puberulous to shortly pubescent. Pods samaroid. *Flowers pale yellowish white; December to May.* Forest margins, riverine bush, bushveld and woodland. *Van Jaarsveld 525.*

W S C N E

Schotia Jacq. (s. Afr.: 4 spp.) 3506000
Ross. 1977. F.S.A. 16,2: 23–33.

brachypetala Sond.
(= *S. rogersii* Burtt Davy,
= *S. semireducta* Merxm.)

Tree, up to 16 m high. Petals all, or some, reduced to linear filaments. Inflorescence usually a dense congested subglobose panicle, usually cauliflorous on older branches but occasionally terminal. *Flowers maroon; September to November.* Thornveld, bushveld, woodland, scrub and forest, often found on riverbanks or on termite mounds. *Codd 4442 & 4443.*

W S C N E

capitata Bolle
(= *S. transvaalensis* Rolfe)

Many-stemmed shrub or slender tree, up to 7 m high. Leaflets 3–5(6) pairs per leaf. Flowers sessile, congested or on pedicels up to 1,5 mm long. Staminal tube forming a distinct sheath projecting as a narrow, irregular rim above junction of filaments. Petals 5, normally developed. *Flowers scarlet; August to March.* Thornveld and bushveld. *Rogers sub TRV 13276.*

W S C N E

latifolia Jacq.
(= *S. diversifolia* Walp.)

Tree, up to 10 m high. Leaflets (15–)25–65 × 14–35 mm, margins usually glabrous or almost so, petioles 5–20 mm long. Inflorescence a lax panicle. Petals 9–11 mm long. *Flowers pink; October.* Bushveld. *Codd 9778.*

W S C N E

Senna Mill. (s. Afr.: 16 spp.) 3536020
Gordon-Gray. 1977. F.S.A. 16,2: 69–108.
Lock. 1988. Kew Bull. 43: 333–342.

bicapsularis (L.) Roxb.*
(= *Cassia bicapsularis* L.)

Perennial with ± woody, branching stems forming an erect ± rounded shrub, ± 2 m high. Leaves with 3, occasionally 2, pairs of leaflets. Pedicels of open flowers 4–7 mm long. *Flowers yellow; June.* Lowveld. Native to South America. *Pretorius 20.*

W S C N E

corymbosa (Lam.) Irwin & Barneby*
(= *Cassia corymbosa* Lam.)

Shrub, up to 3 m high. Leaflets glabrous abaxially, lanceolate, 30–60 × 6–15 mm, margins yellow, usually in 3, occasionally in 2, pairs. Ovaries with valves appressed pubescent. *Flowers bright yellow and brown-veined; February to March.* Grassland, disturbed places. Native to South America. *Stirton & Germishuizen 6911.*

W S C N E

didymobotrya (Fresen.) Irwin & Barneby*
(= *Cassia didymobotrya* Fresen.)

Shrub, up to 7 m high. Stipules persistent, broadly ovate-cordate, 8–14 mm long. Petals obovate, 20–25 × 12–13 mm. *Flowers bright yellow; June to August.* Woodland, disturbed places. Native elsewhere in Africa. *Pienaar 38.*

W S C N E

italica Mill. subsp. **arachoides** (Burch.) Lock
(= *Cassia italica* (Mill.) Lam. ex F.W. Andrews subsp. *arachoides* (Burch.) Brennan)

Perennial herb with prostrate to decumbent, branched stems up to 0.4 m tall. Petioles 3–12 mm long. Stipules linear to ovate-triangular. Petals 9–12 × 5–7 mm. Pods 20–60 mm long, with a ridge of crests along middle of each valve. *Flowers bright yellow and brown-veined; September to May.* Grassland. *Germishuizen 3718.*

W S C N E

multiglandulosa (Jacq.) Irwin & Barneby*
(= *Cassia tomentosa* L.f.)

Perennial shrub, up to 4 m high. Young stem apices and abaxial leaflet surfaces cano-tomentose. *Flowers deep yellow; May.* Native to South America. *Repton 5919.*

W S C N E

obtusifolia (L.) Irwin & Barneby*
(= *Cassia obtusifolia* L.)

Annual herb or shrublet, up to 1 m high. Leaves with 3 pairs of leaflets only, with stalked, finger-like, orange-brown gland ± 2 mm long between 2 lower pairs of leaflets. *Flowers yellow and brown-veined; April.* Riverbanks. Region of origin uncertain. *Van der Schijff 2722.*

W S C N E

occidentalis (L.) Link*
(= *Cassia occidentalis* L.)

Annual or short-lived perennial herb or shrub, up to 2 m high. Young stem apices ridged. Leaflets ovate, 20–40 mm wide. Peduncles at flowering 3–5 mm long. Bracts acuminate to narrowly acute. Pods linear,

80–130 × 5–8 mm. *Flowers pale yellow with brown venation; November to June.* Grassland, riverbanks and disturbed areas. Region of origin uncertain. *Germishuizen 384.*

W S C N E

petersiana (Bolle) Lock

(= *Cassia delagoensis* Harv.,
= *Cassia petersiana* Bolle)

Shrub or small tree, up to 7 m high. Stipules ± persistent, conspicuous, leafy, semicordate to reniform, with one end attenuate-caudate. Pods 100–250 × 10–15 mm, dark brown to black. *Flowers deep yellow and brown-veined; February to June.* Woodland, mopani veld, sandy soils and streambanks. *Scheepers 198.*

W S C N E

septemtrionalis (Viv.) Irwin & Barneby*

(= *Cassia floribunda* sensu Brennan non Cav.,
= *Cassia laevigata* Willd.)

Short-lived perennial subshrub, shrub or small tree, up to 4 m high. Young stem apices and abaxial leaflet surfaces glabrous. Leaves with elliptic or ovate leaflets in 3 or 4, occasionally 2 or 5 pairs. Ovaries glabrous. *Flowers deep yellow; July to June.* Weed in disturbed areas. Native to South America. *Van der Schijff 5523.*

W S C N E

Tylosema (Schweinf.) Torre & Hillc.

(s. Afr.: 2 spp.)

3528030

Coetzer & Ross. 1977. F.S.A. 16.2: 61–64.

esculentum (Burch.) A. Schreib.

(= *Bauhinia burkeana* (Benth.) Harv.,
= *Bauhinia esculenta* Burch.)

Herb with prostrate and trailing stems up to 3 m long. Leaf lobes reniform, 30–75 mm long, leaves divided apically for more than half of their length, petiole 30–70 mm long. Pods oval, 35–60 × 28–40 mm. *Flowers yellow; October to April.* Grassland. *Coetzer 807.*

W S C N E

fassoglense (Schweinf.) Torre & Hillc.

(= *Bauhinia fassoglensis* Schweinf.,
= *Bauhinia kirkii* Oliv.)

Woody climber. Leaf lobes 60–200 mm long, leaves divided apically for a tenth to a third of their length, base deeply cordate, petiole 30–70 mm long. *Flowers yellow; November to February.* Bushveld and woodland. *Van Vuuren 1555.*

W S C N E

Mimosoideae

Key to genera of subfamily Mimosoideae after Ross in F.S.A. 16,1: 2–4 (1975)
and Germishuizen (pers. comm.).

- 1a Plant armed with prickles or spines 2
- 1b Plant unarmed 9
- 2a Inflorescence bicoloured, upper part yellow, lower mauve, pink or white; short lateral branchlets terminating in spines, plants otherwise unarmed; pods densely clustered, usually contorted or spirally twisted; leaflets narrower than 3 mm ... *Dichrostachys*
- 2b Inflorescence concolorous; plants armed with straight spines at nodes, recurved prickles, stipular spines or very rarely with short, lateral branchlets terminating in spines 3
- 3a Plant armed with spine-tipped lateral shoots or with paired or solitary spines at nodes 4
- 3b Plant armed with recurved prickles or stipular spines 6
- 4a Inflorescence globose; spine-tipped lateral shoots present *Albizia*
- 4b Inflorescence an axillary spike 5
- 5a Pods slender, straight or almost so, yellow-brown, usually beaked; leaflets usually well-spaced; bark reddish brown ... *Prosopis*
- 5b Pods falcate or curled into a circular coil, thick, bright orange to reddish brown, not beaked; leaflets not forming spaces inbetween; branches always with white bark ... *Faidherbia*
- 6a Flowers in globose or subglobose heads 7
- 6b Flowers in spikes or spiciform racemes 8
- 7a Stamens as many as or twice as many as corolla lobes; annual or perennial herb or small shrub; flowers pink or mauve; pod ± bristly or prickly on surface or on margins only *Mimosa*
- 7b Stamens numerous (± 35–200); flowers mostly white or deep yellow *Acacia*
- 8a Stamens 10; recurved prickles scattered along stem; leaflets 2,5–9,0 mm wide *Adenopodia*
- 8b Stamens numerous (± 35–200); prickles or stipular spines usually confined to nodes and in pairs, seldom prickles scattered but then leaflets narrower than 1,75 mm *Acacia*
- 9a (1) Inflorescence capitate, globose or subglobose 10
- 9b Inflorescence elongate, spicate or racemose 11
- 10a Aquatic herb with creeping, usually floating and swollen stems *Neptunia*
- 10b Tree; leaves bipinnate, with 1 pinna pair; leaflets large, 20–60 mm wide *Xylia*
- 11a Stamens 10. 12
- 11b Stamens many to numerous 13
- 12a Liane, climber, scandent shrub or erect suffrutex, the latter with leaflets 7–20 mm wide *Adenopodia*
- 12b Suffrutex, shrub or small tree, leaflets narrower than 6,5 mm *Elephantorrhiza*
- 13a Stamen filaments free *Acacia*
- 13b Stamen filaments united basally into a tube, tube included or exerted beyond corolla *Albizia*

Acacia Mill. (s. Afr.: 58 spp.)

3446000

Ross. 1975. F.S.A. 16,1: 24–114.

ataxacantha DC.

(= *A. eriadenia* Benth.,
= *A. lugardiae* N.E. Br.)

Scandent shrub or tree, up to 15 m high, armed with prickles, scattered irregularly along internodes. Flowers in spikes. Pods reddish brown to purplish, usually distinctly acuminate at both ends brittle. *Flowers yellowish white; November to February.* Streambanks, kloofs, forest margins, scrub, often forming dense impenetrable thickets. *Morris 1179.*

W S C N E

baileyana F. Muell.*

Unarmed shrub or tree, up to 5 m high. Leaves with 1–4 pinnae pairs; leaflets 1,5–15,0 mm long, narrower than 2 mm; petiole and rachis together shorter than 25 mm. Inflorescence longer than leaves. *Flowers bright yellow; July to August.* Roadsides. Native to Australia. *Stirton 7028.*

W S C N E

borleae Burtt Davy

(= *A. barbertonensis* Schweick.)

Many-stemmed shrub or tree, up to 5 m high. Leaflets glandular-punctate with conspicuous glands on lower surface and on margins, margins appearing crenulate-glandular. Pods slightly to strongly falcate or curled into an almost complete circle, glandular, viscid. *Flowers yellow; October to March.* Woodland and thornveld, forming thickets. *Wentzel N119.*

W S C N E

burkei Benth.

Tree, up to 27 m high. Prickles in pairs near nodes. Leaflets 4–15(–19) pairs per pinna, linear-oblong or obovate to obovate-oblong, 0,8–7,0 mm wide; pinnae 8–13 pairs per leaf. Pods glabrous, eglandular. *Flowers yellowish white; October to December.* Dry river valley scrub, thornveld and woodland. *Herman 810.*

W S C N E

caffra (Thunb.) Willd.

(= *A. caffra* Willd. var. *transvaalensis* P.E. Glover,
= *A. multijuga* Meisn.)

Tree or shrub, up to 14 m high. Prickles in pairs just below each node. Pinnae more than 4 mm apart, giving leaf an open appearance; leaflets 0,70–2,31 (–3,80) mm wide, 16–64 pairs per pinna. Pods linear, 45–197 × 7–15 mm. *Flowers yellowish white; August to December.* Thornveld, river valley scrub, mixed bushveld and tall grassland. *Van der Schijff* 3975.

W	S	C	N	E
---	---	---	---	---

cyclops *A. Cunn. ex G. Don**

Unarmed shrub or tree, up to 6 m high. Phyllodes 6–25 mm wide, usually straight, sometimes falcate with anastomosing longitudinal venation between main longitudinal nerves. *Flowers bright yellow; September.* Grassveld. Native to Australia. *Behr* 774.

W	S	C	N	E
---	---	---	---	---

davyi *N.E. Br.*

Small tree or shrub, up to 5 m high. Bark on trunk and branches usually corky. Leaves well developed, with 12–27 pinnae pairs; leaflets 20–44 pairs per pinna, up to 1 mm wide. Pods straight or slightly curved, 5–8 mm wide, eglandular. *Flowers bright yellow; December to April.* Grassland, woodland, thornveld, bushveld and scrub. *Leach* 11573.

W	S	C	N	E
---	---	---	---	---

dealbata *Link**

Unarmed shrub or tree, up to 15 m high. Leaf rhachis with gland at junction of all or most pairs of pinnae but not between pinnae pairs; leaflets 1,5–5,5 mm long. Pods not or slightly moniliform. *Flowers bright yellow; July to May.* Riverbanks and roadsides. Native of Australia. *Coetsee* 260.

W	S	C	N	E
---	---	---	---	---

decurrens *Willd.**

Tree, up to 20 m high. Young branches prominently angled, sometimes with wing-like ridges 1–2 mm high. Leaflets 6–15 × 0,30–0,75 mm, midrib central. Inflorescence an axillary raceme or panicle. *Flowers bright golden-yellow; August.* Roadsides. Native to Australia. *Brunnmit* 12418.

W	S	C	N	E
---	---	---	---	---

erioloba *E. Mey.*

(= *A. giraffae* sensu auct. mult., non *A. giraffae* Willd.,
= *A. giraffae* Willd. var. *espinosa* Kuntze)

Tree, up to 15 m high. Pinnae 1–6 pairs per leaf; leaflets 4,0–11,5 mm long, glabrous or subglabrous. Pods 25–50 mm wide, densely grey-velutinous, frequently semilunate to suborbicular. *Flowers yellow; September to October.* Woodland, bush or thornveld. *Van Jaarsveld* 1247.

W	S	C	N	E
---	---	---	---	---

erubescens *Welw. ex Oliv.*

(= *A. dulcis* Marloth & Engl.)

Shrub or tree, up to 10 m high. Prickles in pairs below nodes. Leaf rhachis usually with gland at junction of some of the pinnae pairs or top pinna pair only; leaflets often falcate; petiole 12–25 mm long. *Flowers yellowish white; September to October.* Woodland and scrub, on rocky outcrops, in open bush or on sandy soils. *Codd* 3721.

W	S	C	N	E
---	---	---	---	---

exuvialis *I. Verd.*

Many-stemmed shrub or tree, up to 5 m high. Bark peeling off in strips. Stipules spinescent, spines frequently enlarged and swollen basally. Flowers in round heads. Pods eglandular or with a few scattered glands. *Flowers bright yellow; November to January.* Mixed deciduous bush, woodland and mopani veld. *Van der Schijff* 4034.

W	S	C	N	E
---	---	---	---	---

fleckii *Schinz*

Shrub or tree, up to 7 m high. Leaf rhachis eglandular; leaflets straight, mostly shorter than 5 mm; petiole 3–13 mm long, petiolar gland 0,8–2,2 mm long, flattened, elliptic or oval. *Flowers yellowish white; November to January.* Woodland, scrub, thicket and sandy flats adjacent to rivers. *Codd* 8483.

W	S	C	N	E
---	---	---	---	---

galpinii *Burt Davy*

Tree, up to 36 m high. Prickles in pairs near nodes, dark reddish brown to black. Leaflets 12–35 (–45) pairs per pinna, oblong to linear-oblong, 4–10 × 0,8–3,0 mm. Calyx red or purplish. *Flowers cream to yellowish white; September to November.* Woodland, bushveld or on riverbanks. *Strey & Schlieben* 8575.

W	S	C	N	E
---	---	---	---	---

gerrardii *Benth. var. gerrardii*

(= *A. gerrardii* Benth.,
= *A. hebecladoides* Harms)

Tree, up to 12 m high. Epidermis of young branchlets often splitting and peeling away to reveal rusty red inner layer. Pods falcate, pendulous, valves rather thin. *Flowers white or cream; December to January.* Scrub, thornveld, bushveld and woodland. *Obermeyer & Verdoorn* 9.

W	S	C	N	E
---	---	---	---	---

grandicornuta *Gerstner*

Tree, up to 12 m high. Young branchlets slender, cushions poorly developed at nodes. Spines typically slightly swollen and fused basally. Leaves usually with 2 or 3 pinnae pairs, leaf rhachides glabrous. Pods 7–11 mm wide, falcate. *Flowers white; January.* Thornveld and woodland. *Acocks* 16658.

W	S	C	N	E
---	---	---	---	---

haematoxylon Willd.

Shrub or small tree, up to 10 m high. Leaves densely grey-tomentose, bipinnate but leaflets so tightly compressed laterally that leaves appear simply pinnate. Pods densely grey-velutinous all over with numerous minute, dark, reddish brown to purplish glands, 80–210 × 6–14 mm, falcate or curled into a complete circle. *Flowers bright yellow; November to April.* Kalahari sands, in dry woodland, bush or thornveld or along dry watercourses. *Brueckner 1317.*

W	S	C	N	E
---	---	---	---	---

hebeclada DC. subsp. **hebeclada**

(= *A. hebeclada* DC.,
= *A. stolonifera* Burch.)

Low, spreading shrub or tree, up to 9 m high. Pinnae 4–9 pairs per leaf; leaflets 7–18 pairs per pinna. Pods straight or almost so, erect or sometimes pendulous, valves thick, hard, often conspicuously longitudinally nerved. *Flowers yellowish white or cream; September to November.* Thornveld, bushveld, grassland and dry watercourses. *Retief 1769.*

W	S	C	N	E
---	---	---	---	---

hereroensis Engl.

(= *A. gansbergensis* Schinz,
= *A. mellei* I. Verd.)

Tree or shrub, up to 10 m high. Prickles in hairs just below nodes, strongly recurved. Pinnae less than 4 mm apart, giving leaf a compact appearance; leaflets 0.5–1.1 mm wide. Pods 12–23 mm wide, puberulous to densely pubescent, margins often irregularly constricted between seeds. *Flowers yellowish white; November to February.* Grassland, woodland, and thornveld, rocky slopes and flats. *Van Wyk 856.*

W	S	C	N	E
---	---	---	---	---

karroo Hayne

Tree or shrub, up to 22 m high. Young branchlets glabrous. Stipules spinescent in pairs, 40–70(–100) mm long. Leaflets 6–15(–22) pairs per pinna, 1–5 mm wide. Flowers in round heads. Pods slightly to strongly falcate, constricted between seeds but not jointed, dehiscent. *Flowers bright yellow; November to March.* Thornveld, scrub, bushveld, woodland, grassland and riverbanks. *Hanekom 2003, Ross 2095.*

W	S	C	N	E
---	---	---	---	---

luederitzii Engl. var. **luederitzii**

Tree, up to 15 m high. Spines elongate, 10–70 mm long, 1.5–5.0 mm thick, straight, or spines short and strongly hooked, 3–10 mm long. Leaflets 11–26 pairs per pinna, 2–5 × 0.5–1.5 mm, linear-oblong. Pods brown or reddish brown to purplish, 32–130 × 10–19 mm, straight, linear-oblong. *Flowers yellowish white; October to February.* Sandy soil. *Gubb 242/6.*

W	S	C	N	E
---	---	---	---	---

luederitzii Engl. var. **retinens** (Sim) J.H. Ross & Brennan

(= *A. gillettiae* Burtt Davy,
= *A. retinens* Sim)

Shrub or tree, up to 15 m high. Larger spines 30–55 mm long, 8–18 mm in diameter, basally inflated, usually ± uncinately deflexed near apex; straight, elongate noninflated spines absent. *Flowers yellowish white; November to December.* Thornveld and bushveld, forms thickets sometimes. *Toelken 1279.*

W	S	C	N	E
---	---	---	---	---

mearnsii De Wild.*

Unarmed tree, up to 15 m high. Leaflets 1.5–5.5 mm long; leaf rhachis with gland at junction of each pinna pair and usually also with additional glands between pinnae pairs. Pods ± moniliform. *Flowers pale yellow; September to December.* Plantations, roadsides and grassland. Native to Australia. *Glen 1299.*

W	S	C	N	E
---	---	---	---	---

mellifera (Vahl) Benth. subsp. **detinens** (Burch.) Brennan

(= *A. detinens* Burch.,
= *A. tenax* Marloth)

Much-branched, dense shrub or tree, up to 6 m high. Prickles in pairs near nodes. Leaves normally with 3 (rarely 4) pinnae pairs. Inflorescences short, ± subglobose to ellipsoid. *Flowers yellowish white or cream; August to November.* Dry thornveld, bushveld and wooded grassland. *Zwanziger 28.*

W	S	C	N	E
---	---	---	---	---

nebrownii Burtt Davy

(= *A. glandulifera* Schinz,
= *A. rogersii* Burtt Davy)

Many-stemmed shrub or tree, up to 4 m high. Stipules spinescent. Spines 5–70 mm long. Leaves usually with 1 pinna pair, rarely 2 or 3 pairs. Involucel at or near base of peduncle. Flowers in round heads. *Flowers bright yellow; July to October.* Low-lying sandy flats around pans or riverbanks, bush, thornveld or woodland. Frequently forms thickets. *Obermeyer, Schweickhardt & Verdoorn 60.*

W	S	C	N	E
---	---	---	---	---

nigrescens Oliv.

(= *A. pallens* (Benth.) Rolfe)

Tree, up to 30 m high. Trunk and larger branches usually with scattered irregularly shaped knobs. Prickles in pairs near nodes. Leaves with 2 or 3(4) pinnae pairs; leaflets 1 or 2 pairs per pinna, obovate or obliquely obovate, (7–)12–50 mm wide. Inflorescences spicate, fascicled. *Flowers yellowish white; August to October.* Woodland, wooded grassland, bushveld. *Codd 5385, Croeser 28.*

W	S	C	N	E
---	---	---	---	---

nilotica (L.) Willd. ex Delile subsp. **kraussiana** (Benth.)

Brenan
(= *A. arabica* (Lam.) Willd. var. *kraussiana* Benth.,
= *A. benthamii* Rochebr.)

Tree, up to 10 m high. Pods distinctly moniliform or jointed, often irregularly so, each segment marked with

distinct raised bump which corresponds to seed inside, green when young, drying and becoming black with age, straight or almost so. *Flowers bright yellow; November to December.* Thornveld, scrub, woodland and bushveld. *Onderstall 857.*

W S C N E

permixta *Burt Davy*

Many-stemmed shrub or tree, up to 4 m high. Young branchlets densely tomentose with spreading whitish hairs 0,75–2,00 mm long. Leaflets with few to many spreading cilia along their margins. Flowers in round heads. *Flowers bright yellow; September to December.* Woodland, thorn scrub and grassland. *Stephen 240.*

W S C N E

podalyriifolia *A. Cunn. ex G. Don**

Unarmed shrub or tree, up to 6 m high. Young branchlets and phyllodes densely grey pubescent, especially when young. Phyllodes ovate to elliptic, mostly 10–20 mm wide. Pods 15–20 mm wide. *Flowers bright yellow; May.* Roadsides. Native to Australia. *Duggan & Henderson 64.*

W S C N E

polyacantha *Willd. subsp. campylacantha (Hochst. ex A. Rich.) Brenan*

Tree, up to 15 m high. Leaflets linear, 2–5 × 0,4–0,9 mm; petiole 5–40 mm long, petiolar gland large, 1,5–4,0 × 1,5–3,0 mm, usually slightly flattened, discoid or oblong. *Flowers yellowish white or cream; November to January.* Colluvial or alluvial clays by rivers and streams. *Strey 7935.*

W S C N E

rehmanniana *Schinz*

Shrub or tree, up to 10 m high. Young branchlets clothed with spreading villous hairs 1,0–2,5 mm long, hairs golden when young but becoming greyish white with age. Leaflets 24–48 pairs per pinna, 1,2–2,8 × 0,4–0,9 mm. *Flowers white or cream; November to February.* Wooded grassland and bushveld. *Schweickhardt 1556.*

W S C N E

robusta *Burch. subsp. robusta*

(= *A. robusta* Burch.)

Tree, up to 20 m high. Young branchlets robust, usually with well developed cushions at nodes. Leaves with 3–5(–7) pinnae pairs; leaflets 1,5–3,5 mm wide; rhachillae usually 25–60 mm long, glabrous. Pods glabrous, straight or falcate. *Flowers white; September.* Wooded slopes, woodland, thornveld and river valley scrub. *Morris 1084.*

W S C N E

robusta *Burch. subsp. clavigera (E. Mey.) Brenan*

Tree, up to 20 m high. Leaf rhachis sparingly to densely pubescent. Peduncles sparingly to densely pubescent. Pods usually ± falcate, 12–17 mm wide. *Flowers white;*

August to September. Grassland, woodland, thornveld and scrub. *McMurtry 1706.*

W S C N E

schweinfurthii *Brenan & Exell var. schweinfurthii*

Scandent or nonclimbing shrub, up to 12 m high, armed with irregularly scattered recurved prickles. Leaflets 0,8–2,0 mm wide, glabrous; petiole 26–55 mm long, petiolar gland humped. Flowers in round heads. *Flowers yellowish white; November to February.* Riverine fringing vegetation, woodland, scrub and forest margins. *Van der Schijff 4067.*

W S C N E

senegal *(L.) Willd. var. leiorhachis Brenan*

(= *A. circummarginata* Chiov.)

Shrub or tree, up to 8 m high. Prickles in threes or solitary. Inflorescence axis glabrous or sometimes with a few basal hairs. Flowers in spikes. Pods up to 19 mm wide, rounded to acute apically. *Flowers yellowish white; August to October.* Thornveld, scrub, woodland and mopani veld. *Codd 6190.*

W S C N E

senegal *(L.) Willd. var. rostrata Brenan*

(= *A. spinosa* Marloth & Engl.)

Shrub or tree, up to 8 m high. Prickles in threes or solitary. Inflorescence axis sparingly to densely pubescent. Flowers in spikes. Pods up to 34 mm wide, usually rostrate or acuminate apically. *Flowers yellowish white; November to February.* Woodland, bushveld, thornveld and river valley scrub. *Codd 8489.*

W S C N E

sieberiana *DC. var. woodii (Burt Davy) Keay & Brenan*

(= *A. woodii* Burt Davy)

Tree, up to 18 m high. Young branchlets usually densely pubescent. Leaflets 13–45 pairs per pinna; pinnae 8–30 pairs per leaf. Pods glabrous or very sparingly pubescent, flattened to oval in cross-section, 15–35 mm wide, valves woody. *Flowers pale yellowish white; October to March.* Grassland, woodland and thornveld. *Meeuse 10147.*

W S C N E

stuhlmanni *Taub.*

Obconical shrub, up to 2,5 m high. Indumentum on branchlets spreading, golden, becoming greyish with age. Leaflets 6–15 pairs per pinna, 2,5–5,5 × 0,6–1,5 mm; pinnae 15–19 pairs per leaf. Pods with dense spreading hairs 2–4 mm long. *Flowers white; August.* Low lying areas or flats, often in heavy alluvial soils. *Van der Schijff 5331A.*

W S C N E

swazica *Burt Davy*

Slender shrub or tree, up to 3 m high. Leaves with 2–6 pinnae pairs; leaflets with lateral nerves conspicuous and somewhat raised on lower surface. Inflorescences round heads. Involucel at or above middle of peduncle.

Flowers bright yellow; October to May. Dry bushveld and scrub, boulder-strewn slopes or rocky situations. *Van der Schijff 1506.*

W S C N E

tenuispina I. Verd.

(= *A. permixta* Burtt Davy var. *glabra* Burtt Davy)

Stoloniferous, slender shrub, up to 2 m high. Stipules spinescent, spines slender, up to 1,5 mm in diameter basally, white. Inflorescence a round head. Pods densely glandular, slightly to strongly falcate. *Flowers bright yellow; December to February.* Low thickets, usually on black cotton soil. *Codd 850.*

W S C N E

tortilis (Forssk.) Hayne subsp. **heteracantha** (Burch.)

Brenan

(= *A. heteracantha* Burch.,
= *A. litakunensis* Burch.)

Tree, up to 15 m high. Spines short and strongly recurved or hooked, usually intermixed with some long straight spines. Pods contorted or spirally twisted, glabrous. *Flowers white or yellowish white; November to January.* Woodland, thornveld, scrub and bushveld. *Liebenberg 576.*

W S C N E

welwitschii Oliv. subsp. **delagoensis** (Harms) J.H. Ross & Brenan

(= *A. delagoensis* Harms)

Tree, up to 13 m high. Young branchlets dark grey to brownish black. Prickles in pairs near nodes, strongly recurved. Leaflets 3–8 pairs per pinna, elliptic to ovate, 2,5–5,0 mm wide. *Flowers yellowish white; November.* Thornveld and woodland. *Van der Schijff 3293.*

W S C N E

xanthophloea Benth.

Tree, up to 30 m high. Bark on trunk and branches greenish yellow or lemon, becoming powdery and flaking minutely; bark of twigs soon becoming greenish yellow. Pods thin-valved, straight or slightly curved, transversely segmented, segments mostly longer than wide. *Flowers bright yellow; September to October.* Along riverbanks and in black turf of streams. *Codd 5710.*

W S C N E

Adenopodia Presl (s. Afr.: 4 spp.) 4368020

Ross. 1975. F.S.A. 16, 1: 150–155.

Brenan. 1986. Kew Bull. 41: 77.

spicata (E. Mey.) Presl

(= *Entada spicata* (E. Mey.) Druce,
= *Mimosa spicata* E. Mey.)

Woody climber or scandent shrub, up to 6 m high, usually armed with numerous scattered recurved prickles up to 5 mm long. Pinnae 5–7 pairs per leaf; petioles with gland a short distance above pulvinus. *Flowers yellowish white; October to January.* Streambanks, forest margins or clearings. *Van Wyk 5897.*

W S C N E

Albizia Durazz. (s. Afr.: 13 spp.) 3443000

Ross. 1975. F.S.A. 16, 1: 7–24.

adanthifolia (Schumach.) W. Wight

(= *A. fastigiata* (E. Mey.) Oliv.,
= *Mimosa adanthifolia* Schumach.)

Tree, up to 20 m high. Young branchlets densely and persistently rusty- to fulvous-pubescent. Leaflets 4–8 (–11) mm wide, obliquely rhombic-quadrate or-oblong, midrib diagonal. *Flowers white; October to November.* Forest, wooded ravines, woodland and wooded grassland. *Hemm 5.*

W S C N E

amara (Roxb.) Boivin subsp. **sericocephala** (Benth.) Brenan

(= *Acacia sericocephala* Fenzl,
= *A. sericocephala* Benth.)

Tree, up to 12 m high. Mature leaves clothed with grey to golden spreading indumentum; leaflets 0,5–1,5 mm wide, apex obtuse or subacute, symmetrical, not falcate. Pods puberulous. *Flowering October to November.* Sandy flats, woodland and lowveld bush. *Codd & Dyer 4494.*

W S C N E

anthelmintica (A. Rich.) Brongn.

(= *A. anthelmintica* (A. Rich.) Brongn. var. *pubescens* Burtt Davy)

Shrub or tree, up to 10 m high. Young branchlets often forming abbreviated spine-tipped lateral shoots. Leaflets 2–4 pairs per pinna; rachides and rachillae of all or most leaves projecting at ends as short rigid persistent deflexed hook. *Flowers white; August and September.* Bushveld, scrub, woodland and sand forest. *Codd 5701.*

W S C N E

brevifolia Schinz

(= *A. parvifolia* Burtt Davy,
= *A. rogersii* Burtt Davy)

Tree or shrub, up to 15 m high. Mature leaves glabrous or sparsely appressed grey-pubescent; pinnae 6–10 pairs; leaflets 3,0–7,5 (–9,0) × 0,75–1,75 (–2,00) mm, apex symmetrical, not falcate. *Flowers white or creamy yellow; October to December.* Bushveld, hot, dry rocky hillsides. *Germishuizen 240.*

W S C N E

forbesii Benth.

Tree, up to 20 m high. Mature leaves clothed with grey to golden, spreading indumentum; leaflets 1,5–4,0 mm wide, 6–16 pairs per pinna. Pods oblong, 32–50 mm wide, indehiscent, very prominently transversely venose, veins ± parallel and 2–4 mm apart. *Flowers creamy white; October to November.* Woodland, bushveld and sand forest. *Codd 5704.*

W S C N E

harveyi E. Fourn.

(= *A. hypoleuca* Oliv.,
= *A. pallida* Harv.)

Tree. Mature leaves clothed with grey to golden, spreading indumentum; leaflets 0,5–1,5 mm wide, apex acute,

asymmetrical, falcate, point turned towards apex of pinna. Pods usually glabrous. *Flowers creamy white; October to November*. Woodland, bushveld, near rivers. *Codd 4223*.

W S C N E

petersiana (Bolle) Oliv. subsp. **evansii** (Burt Davy) Brenan
(= *A. evansii* Burt Davy)

Shrub or tree, up to 10 m high, usually branching freely near base, with many ascending branches. Young branchlets densely pubescent. Leaflets 2–5 pairs, 8–22 × 5–13 mm. Pods 14–20 mm wide. *Flowers white, tinged with red; October to December*. Woodland and scrub. *Codd 4296*.

W S C N E

tanganyicensis Baker f. subsp. **tanganyicensis**

Tree, up to 12 m high. Bark smooth, creamy white to ochre-yellow, peeling off in large papery pieces. Leaflets somewhat asymmetrical, ovate- to obovate-elliptic. *Flowers creamy white; September to December*. Bushveld, rocky outcrops and ridges. *Venter 1912*.

W S C N E

versicolor Welw. ex Oliv.
(= *A. mossambicensis* Sim)

Tree, up to 18 m high. Young branchlets densely rusty-tomentose. Mature leaflets broadly and obliquely obovate to subcircular, 15–67 × (10–)15–45 mm, densely pubescent to tomentose beneath, in 2–5 pairs. Pods glabrous. *Flowers creamy white; November to February*. Woodland. *Codd 5694*.

W S C N E

Dichrostachys (A. DC.) Wight & Arn.
(s. Afr.: 1 sp.) 3452000

Ross. 1975. F.S.A. 16,1: 123–129.

cinerea (L.) Wight & Arn. subsp. **africana** Brenan & Brummitt var. **africana**

Shrub or tree, up to 7 m high. Leaflets 0,60–1,75(–2,00) mm wide; glands on leaf rhachis stipitate or columnar, 0,5–2,0 mm high, present at junction of each pinna pair. *Flowers yellow in upper part, mauve, pink or white in lower part; November to January*. Woodland, forest margins, bushveld, grassland, thornveld and scrub. *Van Warmelo 5115/5*.

W S C N E

cinerea (L.) Wight & Arn. subsp. **africana** Brenan & Brummitt var. **pubescens** Brenan & Brummitt

Shrub or tree, up to 7 m high. Both surfaces of leaflets densely pubescent; glands on leaf rhachis stipitate or columnar. *Flowers yellow in upper part, mauve, pink or white in lower part; November to February*. Thornveld and woodland. *Retief 141*.

W S C N E

cinerea (L.) Wight & Arn. subsp. **africana** Brenan & Brummitt var. **setulosa** (Welw. ex Oliv.) Brenan & Brummitt

(= *Acacia kalachariensis* Schinz,

= *D. nutans* (Pers.) Benth. var. *setulosa* Welw. ex Oliv.)

Shrub or tree, up to 7 m high. Leaflets 0,5–0,8 mm wide; glands on leaf rhachis sessile or very shortly (up to 0,3 mm) stipitate, present at junction of all pairs of pinnae. *Flowers yellow in upper part, mauve, pink or white in lower part; November to December*. Bushveld, sandy soil. *Verdoorn sub PRE 27070*.

W S C N E

cinerea (L.) Wight & Arn. subsp. **nyassana** (Taub.) Brenan
(= *D. major* Sim,
= *D. nyassana* Taub.)

Up to 7 m high. Leaves often large and up to 180 mm long, with pinnae up to 75 mm long; some or all leaflets 2 mm or more wide. Peduncles usually fascicled. *Flowers yellow in upper part, mauve, pink or white in lower part; November to March*. Woodland. *Scheepers 50*.

W S C N E

Elephantorrhiza Benth. (s. Afr.:
9 spp.) 3467000

Ross. 1975. F.S.A. 16,1: 138–149.

burkei Benth.
(= *E. elephantina* (Burch.) Skeels var. *burkei* (Benth.) Merr.)

Branched shrub or small tree, up to 6 m high. Leaves with 4–8 pairs of pinnae; leaflets only slightly asymmetrical basally with proximal side cuneate to slightly rounded, 1,5–3,5 mm wide. Pod oblong, 100–190 × 2,5–4,0 mm, compressed. *Flowers yellowish white; September to February*. Woodland, grassland and scrub, rocky situations. *Phillips 3040*.

W S C N E

elephantina (Burch.) Skeels

(= *Acacia elephantina* Burch.,

= *E. burchellii* Benth.)

Suffrutex, up to 0,75 m high. Pinnae 8–17 pairs per leaf; leaflets 12–45 pairs per pinna, 0,5–2,0(–2,5) mm wide, linear to linear-oblong. Pods dark brown, oblong, 95–150 × 30–57 mm. *Flowers yellowish white; September to November*. Grassland, sandy soil. *Phillips 3051*.

W S C N E

goetzei (Harms) Harms subsp. **goetzei**
(= *E. rubescens* Gibbs)

Shrub or tree, up to 4 m high. Leaves with 12–30 pinnae pairs; leaflets 0,7–2,5 mm wide, usually on very short petiolules. Pods linear 150–300 × 13–22 mm. *Flowers yellowish white; October to January*. Woodland and scrub, rocky places. *Vorster & Coetzer 2099*.

W S C N E

obliqua *Burt Davy* var. **obliqua**

Suffrutex, up to 300 mm tall. Stems pubescent. Leaflets ovate, 5,5–15,0 × 2,0–6,5 mm; petiole, rhachis and rhachillae sparingly pubescent. Racemes 35–60 mm long. *Flowers yellowish white; November.* Grassland and edges of vleis. *Pole-Evans sub PRE 13185.*

W	S	C	N	E
---	---	---	---	---

obliqua *Burt Davy* var. **glabra** *E. Phillips*

(= *E. transvaalensis* E. Phillips)

Suffrutex, up to 400 mm tall. Stems glabrous. Leaflets ovate, 5,5–15,0 × 2,0–6,5 mm, oblique; petiole, rhachis and rhachillae glabrous. Flowers in a raceme, 35–60 mm long. *Flowers yellowish white; October to November.* Grassland, among rocks. *Germishuizen 3351.*

W	S	C	N	E
---	---	---	---	---

praetermissa *J.H. Ross*

Shrub, up to 2 m high. Leaflets 0,9–1,5 mm wide. Racemes short, 40–55 mm long, usually aggregated on short lateral branchlets. Pods 120–180 × 20–32 mm. *Flowers yellowish white; November.* Dry wooded hill-sides. *Acocks 20969.*

W	S	C	N	E
---	---	---	---	---

Faidherbia *A. Chev.* (s. Afr.: 1 sp.) 3446010

Lock. 1989. Legumes of Africa: 79.
Ross. 1975. F.S.A. 16,1: 44–46.

albida (*Delile*) *A. Chev.*

(= *Acacia albida* Delile,
= *A. mossambicensis* Bolle)

Tree, up to 30 m high. Stipules spinescent, straight or only slightly curved. Flowers in spikes. Pods orange or chestnut to reddish brown, falcate or curled into circular coil or variously twisted. *Flowers yellowish white to cream; May to August.* Riverine fringing vegetation and dry watercourses. *Pole-Evans 3968.*

W	S	C	N	E
---	---	---	---	---

Mimosa *L.* (s. Afr.: 2 spp.) 3449000

Ross. 1975. F.S.A. 16,1: 117–119.

pigra *L.*

(= *M. asperata* L.)

Shrub, up to 3 m high, sometimes scandent or rambling. Leaves with straight, erect or forward pointing, slender

prickle at junction of each pinna pair; pinnae in 4–14 pairs. Pods clustered, bristly all over, breaking up transversely into segments 3–5 mm long, margins persisting as an empty frame. *Flowers in heads; pink, mauve; February to April.* Roadsides. *Hardy 5454.*

W	S	C	N	E
---	---	---	---	---

Neptunia *Lour.* (s. Afr.: 1 sp.)

3451000

Ross. 1975. F.S.A. 16,1: 120–122.

oleracea *Lour.*

(= *Mimosa natans* L.f.,

= *Neptunia stolonifera* (DC.) Guill. & Perr.)

Aquatic herb. Stems creeping, usually floating and swollen. Flowers in heads 10–20 mm long; peduncles 65–200 mm long. Pods clustered, broadly oblong, 13–28 × 8–12 mm. *Flowers yellow; March.* Pans, rivers and swamps, sometimes in stagnant water. *Stephen 339.*

W	S	C	N	E
---	---	---	---	---

Prosopis *L.* (s. Afr.: 4 spp.)

3454000

Ross. 1975. F.S.A. 16,1: 7.

glandulosa *Torr.* var. **torreyana** (*Benson*) *M.C. Johnst.**

Many-stemmed shrub or tree, up to 10 m high. Leaves 10–60 × 1–4 mm; leaflets 10–25 mm long, 7–22 per pinna. Inflorescence an axillary spike. Flowers sessile. Pod straight or almost so, 100–220 mm long, ± 8 mm in diameter. *Flowers yellow; January.* White, stony, calcrete soils, roadsides. Native to South America. *Henderson 629, Retief 1878.*

W	S	C	N	E
---	---	---	---	---

Xylia *Benth.* (s. Afr.: 1 sp.)

3462000

Ross. 1975. F.S.A. 16,1: 136–137.

torreana *Brenan*

Tree, up to 15 m high. Leaves 2-pinnate. Flowers in heads up to 18 mm in diameter on axillary peduncles. Pods obliquely obovate, 90–120 × 30–50 mm, woody. *Flowers yellow; September to October.* Woodland and sandveld. *Van der Schijff & Marais 3678.*

W	S	C	N	E
---	---	---	---	---

Papilionoideae

Key to tribes of subfamily Papilionoideae after Hutchinson in Dyer, Gen. 1: 220–224 (1975)

- 1a Filaments all free from base upwards, occasionally shortly and ± equally connate at base only; anthers usually uniform in size and shape **Sophoreae**
- 1b Filaments partly or almost wholly united to one another, either monadelphous in closed tube, or diadelphous with vexillary (adaxial) filament often free or partly so 2

2a	Anthers uniform in size and shape or nearly so, not alternately basifix and dorsifix	3
2b	Anthers dimorphic, alternately dorsifix and basifix, either all equal or alternately longer and shorter	43
3a	Free upper part of filaments $\pm$ filiform and not dilated upwards	4
3b	Free upper part of all or half the filaments dilated or expanded upwards; fruits 2-valved or indehiscent, sometimes transversely septate but not breaking into separate joints	40
4a	Fruit not breaking up into separate joints when mature, though sometimes filled between seeds or divided by longitudinal septum, sometimes 1-seeded	5
4b	Fruits jointed when ripe and transversely septate, usually breaking up into 1-seeded segments	39
5a	Filaments monadelphous and partly connate into a single, $\pm$ closed tube, sometimes adaxial filament free at base, but connate higher up with the remainder	6
5b	Filaments diadelphous, mostly the adaxial (vexillary) filament free or partly adnate to the remainder or if monadelphous, then all $\pm$ connate into a sheath split adaxially and sometimes abaxially also	10
6a	Racemes with swollen (tumid) nodes at insertion of pedicels; bracts small or caducous; style glabrous	Diocleae
6b	Racemes or panicles not swollen at nodes of rhachis (at insertion of pedicels) or inflorescence fasciculate, capitate or subumbellate	7
7a	Herbs or shrublets with indumentum (usually present) composed mainly of medifix hairs; racemes or spikes axillary; anther connective tipped by gland or mucro	Indigoferae
7b	Trees and shrubs, rarely climbers or herbs; indumentum when present not of medifix hairs; style glabrous or hairy; anther connective not gland-tipped or mucronate	8
8a	Fruit dehiscent; shrublet or herb; standard often hairy outside	Tephrosieae
8b	Fruit indehiscent	9
9a	Calyx mostly cyathiform, truncate, with small teeth; standard often silky outside; trees or tall scrambling shrubs	Lonchocarpeae
9b	Calyx not cyathiform; shrublets or herbs; flowers mostly capitate or umbellate	Loteae
10a	(5) Leaves simple, not unifoliolate	Indigoferae
10b	Leaves digitately foliolate, sometimes sessile, sometimes unifoliolate by reduction or leaves pinnately 3-foliolate or pinnate	11
11a	Leaves digitately foliolate	12
11b	Leaves pinnately 3-foliolate or pinnate	17
12a	Leaves gland-dotted or pellucid-punctate below; fruit dehiscing by valves, 2- or more-seeded	Cajaneae
12b	Leaves not gland-dotted or pellucid-punctate	13
13a	Herbs or shrublets with indumentum of medifix hairs; anther connective tipped by gland or mucro	Indigoferae
13b	Shrubs or herbs with indumentum, when present, of simple hairs; anther connective not tipped by gland or mucro	14
14a	Leaflets $\pm$ toothed, mostly herbs with 3-foliolate leaves; stipules often adnate to petiole; stipels absent	Trifolieae
14b	Leaflets not toothed; mostly shrubs or shrublets; sometimes herbs; ovary with more than 1 ovule	15
15a	Stipels absent; mostly shrubs or shrublets; flowers in terminal, rarely leaf-opposed spikes, racemes or heads, rarely axillary	Lotononideae
15b	Stipels present, mostly herbs, often climbing	16
16a	Fruits jointed, but dehiscing its full length	Desmodieae
16b	Fruits not jointed, though sometimes filled between seeds	Glycineae
17a	(11) Leaves gland-dotted or pellucid-punctate below; ovules 1-4	18
17b	Leaves not gland-dotted or pellucid-punctate; ovules usually more than 4	19
18a	Fruit usually indehiscent and nearly always 1-seeded; fruit large and samaroid; trees	Pterocarpeae
18b	Fruit dehiscent; seeds mostly 2 or more, rarely 1; bracteoles absent; leaves 3-foliolate, rarely 1-foliolate; shrubs or herbs, sometimes climbing or scrambling	Cajaneae
19a	Fruits dehiscent by valve or valves, sometimes only at apex	20
19b	Fruits indehiscent, sometimes inflated and bladder-like	34
20a	Petals very unequal in length, either standard or keel petals longer than others or each other; stipels usually present	Erythrineae
20b	Petals $\pm$ equal in length, sometimes keel petals beaked or spirally twisted	21
21a	Indumentum when present, usually partly or entirely of medifix hairs; anther connective with gland or mucro at apex	Indigoferae
21b	Indumentum, if present, without medifix hairs; anther connective without gland or mucro	22
22a	Rhachis of inflorescence thickened (nodose) at insertion of pedicels	23
22b	Rhachis of inflorescence not thickened at insertion of pedicels, or flowers fasciculate, capitate or axillary	24
23a	Style glabrous or penicellate only around stigma; keel petals not spirally twisted	Galactieae
23b	Style bearded along inner, adaxial face; keel petals often spirally twisted	Phascoleae
24a	Rhachis of leaves produced into tendril or barren tip or bristle	25
24b	Rhachis not ending in tendril or barren tip or bristle	26
25a	Stamens 10; flowers solitary or racemose in leaf axils; claw of standard free from staminal sheath	Vicieae
25b	Stamens 9, vexillary absent; flowers in terminal or subterminal racemes; claw of standard $\pm$ adnate to staminal sheath	Abreae
26a	Fruits longitudinally septate within intrusion of seed-bearing suture, often inflated; anther loculi mostly separate at apex; style glabrous	Astragaleae
26b	Fruits not longitudinally septate as described above	27
27a	Fruits inflated and bladder-like, sometimes dehiscent only at apex	Coluteae
27b	Fruits not inflated, mostly compressed	28

28a	Stipules mostly adnate to petiole; fruits not septate; leaflets often toothed; mostly herbs	Trifolieae
28b	Stipules when present not adnate to petiole or only slightly so; leaflets entire	29
29a	Style glabrous	30
29b	Style bearded; herbs or undershrubs	33
30a	Racemes axillary or at older, leafless nodes	31
30b	Racemes or panicles terminal or leaf-opposed	32
31a	Upright herbs, subshrubs, shrubs or trees; fruit mostly filled between seeds	Robinieae
31b	Climbing herbs, rarely shrubs; fruits usually not filled between seeds	Glycineae
32a	Herbs or shrublets; leaves with stipels	Pseudarthrieae
32b	Herbs, sometimes climbing or shrublets; stipels absent	Tephrosieae
33a	Racemes terminal or leaf-opposed or in upper leaf axils, often leafy at base	Tephrosieae
33b	Racemes axillary or rarely flowers single or few in leaf axils, not leafy at base	Robinieae
34a	(19) Fruits inflated and bladder-like or inflated on each face; stipels absent	35
34b	Fruits not inflated or bladder-like, sometimes winged	36
35a	Fruits not longitudinally septate, style bearded along adaxial side or near apex; leaves pinnate or 1-foliolate	Coluteae
35b	Fruits longitudinally septate or partly so by intrusion of seed-bearing suture; style glabrous	Astragaleae
36a	Leaflets mostly alternate, rarely unifoliolate	37
36b	Leaflets mostly opposite; leaves imparipinnate; ovary with 2 or more ovules	38
37a	Anthers small, didymous, not versatile, loculi erect, opening by short, terminal slit or divergent at base with lengthwise slit	Dalbergieae
37b	Anthers versatile, loculi parallel, opening by slit, rarely by terminal pore; fruit often flattened	Pterocarpeae
38a	Trees or scrambling shrubs; flowers in racemes or panicles	Lonchocarpeae
38b	Shrublets or herbs; flowers capitate or umbellate	Loteae
39a	(4) Leaves without stipels; keel petals obtuse or beaked, incurved; wings often transversely plicate; filaments sometimes connate in 2 lateral branches	Aeschynomeneae
39b	Leaves with stipels; adaxial filament free or $\pm$ connate with others into closed tube	Desmodieae
40a	(3) Claw of some or all petals partly adnate to staminal sheath; flowers in heads or dense spikes; leaflets usually toothed	Trifolieae
40b	Claw of petals not adnate to staminal sheath or tube	41
41a	Stamens united into closed tube; shrub or small tree, silky pubescent; leaves imparipinnate; racemes terminal	Tephrosieae
41b	Stamens united into an open sheath	42
42a	Stipules mostly partly adnate to petiole; nerves of leaves extended to the usually toothed margin	Trifolieae
42b	Stipules $\pm$ free from petiole; leaflets entire, nerves not running into margin; lowermost pair resembling stipules	Loteae
43a	(2) Fruits transversely septate and breaking up into 1-seeded joints, or reduced to 1 joint; leaves few-foliolate	44
43b	Fruits not transversely septate or, if so, then not breaking up into separate joints	45
44a	Filaments all connate into a sheath, split adaxially or into 2 lateral bundles, vexillary filament rarely free; flowers in axillary racemes, rarely in fascicles or subcymes	Aeschynomeneae
44b	Filaments all connate into closed tube; flowers spicate, capitate or rarely subracemose, terminal or axillary	Stylosantheae
45a	Filaments connate into a $\pm$ closed tube, but free at top; stipels absent	46
45b	Filaments connate into a sheath, split adaxially or sometimes adaxial (vexillary) filament free or partly so, rarely absent; leaves simple or 1-more-foliolate	49
46a	Leaves simple (not unifoliolate) or reduced to scales; perennial herbs	Lotononideae
46b	Leaves digitately or pinnately foliolate or rarely unifoliolate	47
47a	Ovary 1-ovuled	Stylosantheae
47b	Ovary more than 1-ovuled; fruit more than 1-ovuled; fruit more than 1-seeded	48
48a	Calyx lobes or lips much longer than tube; shrublets or herbs; seeds without strophiole	Lupineae
48b	Calyx lobes much shorter than tube, or calyx 2-lipped; shrubs or shrublets, sometimes spiny; seeds with strophiole	Cytiseae
49a	(45) Leaves simple (not unifoliolate) or reduced to scales	50
49b	Leaves 3-more-foliolate or 1-foliolate by reduction (detected by distinct pulvinus at top of petiolule)	51
50a	Style glabrous; vexillary filament connate with others into an open sheath or part tube; ovary 2-many-ovuled	Lotononideae
50b	Style bearded; flowers mostly in terminal or leaf-opposed racemes or spikes	Crotalarieae
51a	Leaves glandular below; stipels mostly present; style bearded lengthwise or pilose around stigma	52
51b	Leaves not glandular below	53
52a	Anthers alternately basifixed and dorsifixed; calyx 2-lipped; leaves usually with stipels	Phaseoleae
52b	Anthers subuniform, all versatile; calyx not 2-lipped; stipels mostly absent	Psoraleae
53a	Style bearded lengthwise or ciliate on adaxial side; fruits usually turgid or inflated	Crotalarieae
53b	Style glabrous or at most pubescent only towards base	54
54a	Style at most pubescent only towards base; fruits not inflated	Glycineae
54b	Style glabrous	55
55a	Leaves digitately 3- or rarely 1-foliolate, sometimes sessile; stipels absent; mostly shrublets	56
55b	Leaves pinnately foliolate; stipels mostly present; mostly climbers	57
56a	Calyx lobes or teeth at most only slightly longer than tube	Lotononideae
56b	Calyx lobes or lips much longer than tube	Lupineae

- 57a Vexillary filament connate with others; climbing herb **Glycineae**
 57b Vexillary filament free from others or nearly so; petals very unequal in length; fruit with stinging hairs **Erythrineae**

Abreae

- Shrub or undershrub, often twining; leaves abruptly pinnate, with common petiole ending in a bristle; leaflets many-jugate; pod membranous or woody, oblong or linear, compressed, glabrous or sometimes rugose and hairy; seeds sometimes red with black base **Abrus**

Aeschynomeneae

- 1a Segments of fruit rather longer than broad; shrubs **Ormocarpum**
 1b Segments of fruit $\pm$ square or semiobicular; shrubs or herbs 2
 2a Fruit exserted from calyx **Aeschynomene**
 2b Fruit enclosed within calyx 3
 3a Stipules spurred at base; spur bilobed, with one side linear and longer than the other **Smithia**
 3b Stipules not spurred at base **Kotschyia**

Astragaleae

- Unarmed herb; stipules very large, leafy; leaflets 8–12-jugate, oblong, mucronate; pod elongate, compressed, glabrous, on stipe longer than calyx **Astragalus**

Cajaneae

- 1a Ovules 4 or more; fruit $\pm$ compressed, acuminate, marked between seeds with oblique, depressed lines **Cajanus**
 1b Ovules 2, rarely 3 2
 2a Calyx lobes enlarged and membranous or scarious after flowering, the lowest largest; fruits falcate-ovate, enclosed by calyx **Rhynchosia**
 2b Calyx lobes not enlarged after flowering 3
 3a Fruit turgid; leaves digitately 3-foliolate or 1-foliolate; flowers spicate-racemose or paniculate **Flemingia**
 3b Fruit compressed; flowers usually several in racemes 4
 4a Stems usually twining or trailing; funicle of seed attached in middle of hilum **Rhynchosia**
 4b Stems stiff and erect; funicle of seed attached at end of linear hilum **Eriosema**

Coluteae

- Style bearded with hairs on upper (adaxial) face; fruit membranous-bladdery, inflated **Sutherlandia**
 Style bearded around stigma; fruit membranous, slightly inflated or compressed **Lessertia**

Crotalariaeae

- Calyx usually 2-lipped; standard mostly cordate and bicallose at base within, usually clawed; wings shorter than keel, keel bent near base or $\pm$ halfway, ending in a beak **Crotalaria**

Cytiseae

- Spinescent shrub **Ulex**

Dalbergieae

- Trees, sometimes strongly scandent, sometimes villous **Dalbergia**

Desmodieae

- Fruit segments flat or nearly so; calyx deeply divided, not glumaceous; leaves usually pinnately and occasionally digitately (1–)3(–5)-foliolate **Desmodium**
 Fruit segments terete or subterete; calyx deeply divided and glumaceous; leaves mostly 1-foliolate **Alysicarpus**

Diocleae

- Calyx with 4 ± similar lobes, not 2-lipped; fruit mostly narrow, compressed, upper suture neither thickened nor winged *Pueraria*
 Calyx 2-lipped, upper lip relatively large, entire or 2-lobed, lower very small; fruit ribbed or winged *Canavalia*

Erythrineae

- Standard much larger and longer than keel petals; anthers uniform; mainly trees or shrubs *Erythrina*
 Standard much smaller and shorter than keel petals; anthers alternately dorsifixed and basifixed; mainly climbers; fruits often with stinging hairs *Mucuna*

Galactieae

- Climbing herb; leaves 3-foliolate; leaflets elliptic-oblong; upper calyx lobes united to form entire lip; vexillary stamen usually free; pod linear to linear-oblong; seeds yellowish brown to dark blackish red *Galactia*

Glycineae

- 1a Anthers dimorphic, alternately small and sterile; herbaceous climbers *Teramnus*
 1b Anthers ± uniform in size and shape, all fertile 2
 2a Style bearded along adaxial surface; standard large; fruits compressed *Clitoria*
 2b Style glabrous, except rarely with some hairs around stigma 3
 3a Mouth of cylindric calyx tube obliquely truncate, with obsolete teeth; style filiform but dilated above middle; fruit torulose between the blue and black seeds *Dumasia*
 3b Mouth of rather shortly tubular calyx ± regularly lobed or style not dilated; seeds with scale-like, papery caruncle *Neonotonia*

Indigoferae

- Standard dorsally hairy or if glabrous, then upper margin of keel with proximal fringe of hairs *Indigofera*
 Standard dorsally glabrous with upper margin of keel without proximal fringe of hairs *Indigastrum*

Lonchocarpeae

- Wing petals free from keel, keel petals free from each other; flowers in terminal panicles; fruits margined with a wing on each side *Xeroderris*
 Wing petals adnate to keel *Lonchocarpus*

Loteae

- Annual or perennial herb or undershrub; leaves 3-foliolate, with 1 or 2 leaflets near stem, resembling stipules; flowers in axillary umbels *Lotus*

Lotononideae

- 1a Stipules absent or inconspicuous; anthers often dimorphic 2
 1b Stipules conspicuous, free from each other and from leaf 6
 2a Leaves simple, lanceolate; perennial herb; villous *Lotononis*
 2b Leaves compound, rarely reduced to a single leaflet or scales 3
 3a Calyx ± regularly 5-toothed; fruit linear; leaves reduced to scales *Lebeckia*
 3b Calyx not regularly 5-toothed 4
 4a Calyx bilabiate; fruit subtorulose, linear, flat; keel longer than standard *Dichilus*
 4b Calyx with 4 upper lobes ± united in pairs, the lowest free; anthers dimorphic 5
 5a Keel and style curved; mostly shrublets *Lotononis*
 5b Keel and style straight; mostly herbs *Pearsonia*
 6a Calyx equally 5-toothed or -lobed 7
 6b Calyx not equally 5-toothed or -lobed 8
 7a Anthers uniform, all bearing anthers; leaves digitately 3-foliolate or only upper 1-foliolate *Rothia*
 7b Anthers alternately longer (basifixed) and shorter (dorsifixed) *Bolusia*
 8a Calyx with 4 upper teeth ± united in pairs, lower one free; keel petals bent; fruits straight or oblique *Lotononis*
 8b Calyx bilabiate; anthers alternately dissimilar; fruits linear, compressed, often tortulose *Melolobium*

Lupineae

Herbs or undershrubs, mostly perennial **Argyrolobium**

Phaseoleae

- 1a Stigma lateral, oblique; style filiform **Vigna**
 1b Stigma terminal 2
- 2a Stigma bilabiate; stamens monadelphous **Otoptera**
 2b Stigma not bilabiate; adaxial stamen usually free 3
- 3a Pollen grains tuberculate or spinulose, zonitriporate; style tenuous throughout or slightly widened above; standard with narrow, elongated appendages; wings very narrow; flowers mostly yellow or orange **Macrotyloma**
 3b Pollen grains not spinulose or, if somewhat granulate, then other characters not as above; flowers often shades of red, violet, purple or blue 4
- 4a Style not narrowed into a thin waist 5
 4b Style of 2 parts, an upper, incrassate part and a basal, tenuous part 9
- 5a Style conspicuously flattened throughout and blade-like, slightly less than at right angles to ovary; staminal appendages 2 6
 5b Style not conspicuously flattened throughout 7
- 6a Style 2-winged, glabrous; stigma $\pm$ penicillate; keel somewhat rounded **Alistilus**
 6b Style not winged, with line of hairs along inner margin; stigma not penicillate; keel sharply angled in middle; pods usually verrucose along margins **Lablab**
- 7a Style with apex flattened into a tenuous, spatulate portion, stigmatose along terminal edge **Sphenostylis**
 7b Style not flattened 8
- 8a Style with distinct, bulging, eccentric callus at its junction with ovary **Neorautanctia**
 8b Style without prominent callus at junction with ovary; stigma terminal, usually ringed with hairs **Dolichos**
- 9a Keel not so strongly curved; stigma terminal, scarcely penicillate; flowers on nodulate rhachis **Dolichos**
 9b Keel incurved through 180–360°; stigma terminal penicillate, with simple or branched hairs; flowers in axillary fascicles, usually precocious **Decorsea**

Pseudarthrieae

Herbs, tomentose-villous or viscid-pubescent; leaves pinnately 3-foliolate, stipulate; flowers racemose; standard sometimes cuneate; wings free, eared and shortly clawed; pod compressed **Pseudarthria**

Psoraleae

Key after Stirton in *Advances in legume systematics* 1: 337–343 (1981).

- 1a Flower pedicel subtended by distinctive lobed cupulum; calyx lobes covered with black stubby hairs on inner face, tube prominently ribbed and encrusted with glands; internal secretory cavities present in leaflets **Psoralea**
 1b Flower pedicel never subtended by cupulum 2
- 2a Fruit oval, conspicuously black glandular warty when mature **Cullen**
 2b Fruit never black glandular warty; leaflets recurved-mucronate **Otholobium**

Pterocarpeae

Tree; leaves imparipinnate; leaflets few to many; flowers usually yellow; standard orbicular or broadly ovate, with broad claw; pod compressed, indehiscent, orbicular or ovate, $\pm$ oblique at base, usually thickened or hardened in centre, with membranous wing or sharp ridge **Pterocarpus**

Robinieae

Key after Polhill & Raven in *Advances in legume systematics* 1: 283–288 (1981).

- Style hairy below stigma; style base flange-like, extended under ovary apex; keel not or scarcely beaked; pods with veins reticulate, if not obscured by bristles, with well-spaced seeds not in distinct compartments; inflorescences mostly pendent **Robinia**
 Style usually glabrous; bracteoles present; leaves paripinnate; pod septate, 6–many-seeded, sometimes winged; hilum usually subcircular; style tip erect; vexillary filament curved near base **Scsbania**

Sophoreae

- 1a Leaves reduced to 1 leaflet (unifoliolate); fruit linear or falcate **Baphia**
 1b Leaves with 2 or more leaflets 2

- 2a Fruit or pod moniliform, stalked; flowers white, yellow or rarely blue-violet, in racemes or leafy panicles **Sophora**
 2b Fruit not moniliform 3
 3a Fruit broadly linear, $\pm$ winged or margined; flowers yellow **Calpurnia**
 3b Fruit not winged; flowers mainly blue or pink 4
 4a Standard much broader than other petals; racemes simple, pendulous; flowers blue; fruit linear to oblong, compressed **Bolusanthus**
 4b Standard only slightly broader than other petals; racemes paniculate; fruit stalked, drupe-like **Xanthocercis**

Stylosantheae

Key after Gillett, Polhill & Verdcourt in F.T.E.A. (Leguminosae) 3,1: 435 (1971).

- 1a Leaflets 3; receptacle long, filiform **Stylosanthes**
 1b Leaflets 2 or 4 2
 2a Leaves pinnately 4-foliolate; pod hypogeal, not regularly jointed; receptacle long, filiform, resembling a pedicel **Arachis**
 2b Leaves digitately 2- or 4-foliolate; pod subaerial, regularly jointed; receptacle short **Zornia**

Tephrosieae

- 1a Robust shrub or small tree, silvery pubescent; filaments united into a tube; alternate filaments slightly dilated at apex; racemes terminal; fruits linear, compressed **Mundulea**
 1b Herbs or undershrubs; alternate filaments not dilated 2
 2a Legume contorted, membranous, subindehiscent; leaves digitately foliolate; stipules small or absent; flowers 2 or 3 in leaf axils **Ptychlobium**
 2b Legume coriaceous or rigid 3
 3a Leaflets with 5–7 lateral veins on each side of midrib, looping back and not forming a marginal nerve **Ophrestia**
 3b Leaflets with lateral veins confluent in a marginal nerve 4
 4a Legume 2–few-seeded; leaves usually pinnately 3-foliolate **Tephrosia**
 4b Legume 1-seeded; leaves 1-foliolate; leaflet obcordate **Requienia**

Trifolieae

- 1a Petals becoming dry and persistent after flowering; filaments mostly dilated upwards; fruit indehiscent **Trifolium**
 1b Petals falling after flowering; filaments not dilated 2
 2a Flowers in slender racemes; ovules few; fruit indehiscent or tardily 2-valved **Melilotus**
 2b Flowers in heads or short racemes or rarely solitary 3
 3a Fruit straight or curved, mostly linear **Trigonella**
 3b Fruit mostly spirally coiled, scarcely dehiscent, mostly prickly **Medicago**

Vicieae

Low or climbing herbs; leaf rachis ending in tendril or bristle; staminal tube with an oblique top; wing petals adherent to keel; filaments filiform; fruit $\pm$ compressed **Vicia**

Abrus *Adans.* (s. Afr.: 2 spp.) 3856000

Breteler. 1960. *Blumea* 10: 607.
 Verdcourt. 1970. *Kew Bull.* 24: 235.
 Verdcourt. 1971. *F.T.E.A.* 3,1: 113–114.

laevigatus *E. Mey.*

Climber. Inflorescence slender, straight or slightly curved. Pods flat or only slightly bulging over seeds. Seeds laterally compressed, entirely brown-black. *Flowers pale purple to yellowish; November to March.* Edge of forest and riverbanks. *Acocks 12352.*

W S C N E

precatorius *L.* subsp. **africanus** *Verdc.* (= *A. squamulosus* *E. Mey.*)

Climber. Inflorescence stout, rigid and strongly falcate. Pods bulgy, 20–35 $\times$ 10–15 mm, mostly truncate at both

ends. Seeds ovoid, scarlet with black spot around hilum. *Flowers pink, pale purple to yellowish; May.* Woodland and riverbanks. *Germishuizen 814.*

W S C N E

Aeschynomene *L.* (s. Afr.: 10 spp.) 3793000

Gillett. 1960. *Kew Bull.* 14: 334.
 Verdcourt. 1971. *F.T.E.A.* 3,1: 364–406.

indica *L.*

Erect herb, up to 1.2 m high, drying greenish. Leaves 16–50(–70)-foliolate. Inflorescences leaf-opposed or axillary. Pods with articles strongly tuberculate when adult. *Flowers pale yellow; January to May.* Grassland and mud edge of water. *Codd 5251.*

W S C N E

micrantha DC.

Prostrate perennial herb. Leaves 4- or 5-foliolate; leaflets cuneately and obtusely obovate, ciliate, sparsely pubescent to glabrescent, $\pm 7 \times 4$ mm, prominently reticulate beneath. *Flowers dark yellow; October to May.* Woodland and grassland. *Codd & De Winter 4944.*

W	S	C	N	E
---	---	---	---	---

nodulosa (Baker) Baker f. var. nodulosa

(= *A. shirensis* Taub.)

Shrub or small tree, up to 4 m high. Stem, petioles, rhachis and flower stalks densely hairy. Leaves 8–32-foliolate; leaflets narrowly oblong, apex rounded with fine hair-like tip. Fruit with 3–6 articles. *Flowers yellow; June to February.* Grassland and woodland. *Van Wyk & Theron 4544.*

W	S	C	N	E
---	---	---	---	---

nodulosa (Baker) Baker f. var. glabrescens J.B. Gillett

Similar to var. *nodulosa*, but differs in having inflorescence and fruits glabrous or almost so. Streambanks. *Codd 6888.*

W	S	C	N	E
---	---	---	---	---

nyassana Taub.

Shrub, up to 3 m high. Stems, peduncles and rhachis glabrous to densely viscid pubescent or scabrid. Leaves 14–80-foliolate. Pods of 1 or 2 articles joined by a neck 2–4 mm wide, articles 12–27 $\times$ 9–13 mm, flat and papery. *Scheepers 683.*

W	S	C	N	E
---	---	---	---	---

rehmannii Schinz var. rehmannii

Erect shrub, up to 1.5 m high. Branchlets and rhachis glabrous. Leaf rhachis subglabrous or very sparsely hispidulous; leaflets 15–19 mm long. *Flowers orange-yellow; December to January.* Forest. *Hutchinson 2216.*

W	S	C	N	E
---	---	---	---	---

rehmannii Schinz var. leptobotrya (Harms ex Baker f.)

J.B. Gillett

(= *A. glutinosum* Schinz,
= *A. leptobotrya* Harms ex Baker f.)

Small shrub, up to 1.2 m high. Branchlets, stipules and rhachis glandular hispidulous. Flowers ± 12 mm long. Pods with 2 or 3 articles. *Flowers orange-yellow; October to March.* Grassland. *Strey 3023.*

W	S	C	N	E
---	---	---	---	---

rhodesiaca Harms

Prostrate herb. Leaves 4–7-foliolate; leaflets oblanceolate, 5–15 $\times$ 1.5–2.5 mm. Stipules persistent, lanceolate to oblong-ovate, base hastate, apex appendiculate. Grassland, disturbed places. *Netshiungani 1346.*

W	S	C	N	E
---	---	---	---	---

Alistilus N.E. Br. (s. Afr.: 1 sp.) 3910010

Brown. 1921. Kew Bull. 1921: 294–295.

bechuanicus N.E. Br.

Prostrate perennial herb. Leaves long-petioled, terminal leaflet 3-lobed, pubescent. Flowers in axillary racemes on long peduncles. *Flowers mauve; November to March.* Woodland. *Codd 8454.*

W	S	C	N	E
---	---	---	---	---

Alysicarpus Desv. (s. Afr.: 4 spp.) 3810000

Verdcourt. 1971. F.T.E.A. 3,1: 491–501.

Schrire. 1988. Bothalia 18: 17.

glumaceus (Vahl) DC. subsp. glumaceus var. glumaceus

Erect annual herb, up to 1.5 m high. Inflorescence elongate and spike-like. Fruit moniliform, well exerted from calyx, articles with obvious transverse ridge sculpturing. *Flowers orange, red or mauve; March to April.* Bushveld, grassland, roadsides and weed of old lands. *Gertenbach 7021.*

W	S	C	N	E
---	---	---	---	---

rugosus (Willd.) DC. subsp. perennirufus J. Léonard

(= *A. violaceus* (Forssk.) Schindl.)

Semi-erect, much-branched herb. Leaves narrowly ovate. Calyx lobes with brown to orange cilia. Fruit moniliform, articles with obvious transverse ridge sculpturing. *Flowers pink; October to April.* Grassland and woodland. *Hanekom 1913.*

W	S	C	N	E
---	---	---	---	---

vaginalis (L.) DC. var. vaginalis

(= *Hedysarum vaginale* L.)

Semiprostrate or decumbent herb. Stems trailing. Leaves simple, elliptic, cordate at base. Fruit with straight margins. *Flowers red; November to March.* Bushveld and grassland. *Codd & De Winter 4964.*

W	S	C	N	E
---	---	---	---	---

zeyheri Harv.

Erect to spreading herb, up to 200 mm tall. Leaves coriaceous with very prominent reticulate venation, simple, ovate to elliptic. Fruit moniliform, articles smooth. *Flowers maroon and cream; October to March.* Bushveld and grassland. *Germishuizen & Retief 654.*

W	S	C	N	E
---	---	---	---	---

Arachis L. (s. Afr.: 1 sp.) 3803000

Verdcourt. 1971. F.T.E.A. 3,1: 440–442.

hypogaea L.*

Erect or prostrate annual or perennial herb. Leaves paripinnately 4-foliolate, prominently veined. Pods oblong or sausage-shaped, 20–60 mm long with gynophore 10–200 mm long. *Flowers yellow.* Mixed bushveld and grassland. Native to Brazil. *Van Jaarsveld 33.*

W	S	C	N	E
---	---	---	---	---

Argyrolobium Eckl. & Zeyh. (s. Afr.: 46 spp.) 3673000

Harvey. 1862. F.C. 2: 67–76.
Edwards. 1993. Pers. comm.

adscendens Walp.

Decumbent herbaceous plant, occasionally scandent, up to 400 mm tall. *Flowers yellow; September to February.* Woodland and grassland. PRE specimens on loan.

W S C N E

harveyanum Oliv.

(= *A. uniflorum* Harv.)

Herbaceous geophyte, up to 300 mm tall. *Flowers single, leaf-opposed, yellow; September to February.* Grassland and woodland. PRE specimens on loan.

W S C N E

lancifolium Burt Davy

Suffrutex, up to 0,9 m high. Stems annual, caudex perennial. *Flowers yellow; November to January.* Grassland and woodland. PRE specimens on loan.

W S C N E

megarrhizum Bolus

Suffrutex. Stems annual, caudex perennial. *Flowers yellow; October to January.* Grassland and woodland. PRE specimens on loan.

W S C N E

muddii Dummer

Suffrutex. Stems annual, usually many. *Flowers bright yellow; October to February.* Montane grassland. PRE specimens on loan.

W S C N E

pauciflorum Eckl. & Zeyh. var. **pauciflorum**

Suffrutex, up to 150 mm tall. *Flowers yellow; September to March.* Rocky grassland. PRE specimens on loan.

W S C N E

rupestre (Eckl. & Zeyh.) Walp.

Herbaceous, usually decumbent or scandent, up to 200 mm tall. *Flowers yellow, becoming russet; September to February.* Grassland, usually among rocks, common in highland. PRE specimens on loan.

W S C N E

speciosum Eckl. & Zeyh.

Suffrutex, up to 0,7 m high, black on pressing. Stems annual, caudex perennial. Leaves heteromorphic. *Flowers yellow, but black when damaged; October to February.* Grassland and woodland. PRE specimens on loan.

W S C N E

stipulaceum Eckl. & Zeyh.

Silver-leaved herbaceous geophyte, up to 500 ml tall. Stems annual or weakly perennial. Stipules broad,

ovate, larger than leaflets. *Flowers yellow; September to January.* Grassland and woodland. PRE specimens on loan.

W S C N E

tomentosum (Andrews) Druce

(= *A. andrewsianum* (E. Mey.) Steud.)

Shrub or suffrutex, up to 2 m high. *Flowers yellow; September to April.* Forest and forest margins. PRE specimens on loan.

W S C N E

transvaalense Schinz

Suffrutex, up to 1,5 m high. Stems annual, caudex perennial. *Flowers bright yellow; November to January.* PRE specimens on loan.

W S C N E

tuberosum Eckl. & Zeyh.

(= *A. angustifolium* Eckl. & Zeyh.)

Herbaceous geophyte, up to 0,6 m high. Stems slender, poorly branched. *Flowers red-brown and yellow, standard brown behind yellow in front. Wings yellow basally, red-brown distally, keel yellow; October to March.* Grassland and woodland. PRE specimens on loan.

W S C N E

variopile N.E. Br.

Herbaceous, often scandent, up to 400 mm tall. *Flowers yellow becoming russet; October to February.* High altitude sourveld. PRE specimens on loan.

W S C N E

wilmsii Harms

Silver-leaved suffrutex, up to 0,8 m high, very bushy, erect. *Flowers bright yellow; October to February.* Grassland and woodland. PRE specimens on loan.

W S C N E

Astragalus L. (s. Afr.: 2 spp.) 3766000

Gillett. 1964. Kew Bull. 17: 415.
Gillett. 1971. F.T.E.A. 3,4: 1056.

atropilosulus (Hochst.) Bunge subsp. **burkeanus**

(Benth. ex Harv.) J.B. Gillett var. **burkeanus**

(= *A. burkeanus* Benth. ex Harv.)

Erect, spreading or ascending herb, up to 1 m high. Racemes rather shorter than, ± as long as, or up to twice as long as subtending leaves. Pods 5 mm wide, more than 5 times as long as wide. *Flowers purple; September to May.* Grassland, riverbanks. Germishuizen 3796.

W S C N E

Baphia Afzel. ex Lodd. (s. Afr.: 2 spp.) 3612000

Brummitt. 1965. Bolm Soc. broteriana 39: 157.
Soladoye. 1985. Kew Bull. 40,2: 291.

massaiensis Taub. subsp. **obovata** (Schinz) Brummitt
var. **obovata**

Shrub or small tree, up to 8 m high. Leaves obtuse to rounded. Buds and pedicel with spreading hairs. Flowers in axillary fascicles. Ovary pubescent. Pods blackish or purplish brown. *Flowers white; December to January.* Woodland and Wambia sandveld. *Van der Schijff 3341.*

W S C N E

Bolusanthus Harms (s. Afr.: 1 sp.) 3607010

Harms. 1906. Feddes Reprium 2: 14.

Van Wyk. 1984. Field guide to the trees of the Kruger National Park: 91.

speciosus (Bolus) Harms

(= *Lonchocarpus speciosus* Bolus)

Tree, up to 7 m high. Leaves compound with 3–7 pairs of leaflets; leaflets lanceolate, up to 70 × 10 mm, base markedly asymmetric. Pods narrow, ± 70–100 × 10 mm. *Flowers blue to mauve; August to November.* Wooded grassland and arid lowveld. *Onderstall 812.*

W S C N E

Bolusia Benth. (s. Afr.: 2 spp.) 3732000

Schreiber. 1970. F.S.W.A. 60: 15.

capensis Benth.

Prostrate to erect perennial herb. Leaves linear, 5 times as long as broad. *Flowers solitary, yellow; February and September.* Grassland. *Pettifer 244.*

W S C N E

Cajanus DC. (s. Afr.: 1 sp.) 3892000

Verdcourt. 1971. F.T.E.A. 4: 709–711.

cajan (L.) Millsp.*

(= *C. indicus* Spreng.,

= *Cytisus cajan* L.)

Erect shrublet or shrub, up to 4 m high. Stems ribbed. Leaflets elliptic, green above, paler silvery grey-green beneath. Inflorescence a terminal panicle. Pods linear-oblong, inflated, with long persistent acumen, 3–7-seeded, with seeds separated by oblique grooves on pod faces, pubescent. *Flowers yellow; April to November.* Cultivated lands and rocky hillsides. Native to Africa. *Zambatis 1185.*

W S C N E

Calpurnia E. Mey. (s. Afr.: 7 spp.) 3607000

Harvey. 1894. F.C. 2: 266–268.

Brummitt. 1967. Kirkia 6: 123–132.

Brummitt. 1970. Kew Bull. 24,1: 71.

Gillett et al. 1971. F.T.E.A. 3,1: 47.

aurea (Aiton) Benth. subsp. **aurea**

(= *Robinia subdecandra* L'Hér.,

= *Sophora aurea* Aiton)

Shrub or small tree, up to 4 m high. Ovary and under-surface of leaflets appressed-pubescent. Calyx 6–9 mm, with teeth shorter than tube. Pods 50–120 × 8–16 mm, with 1.0–2.5 mm-broad wing. *Flowers yellow; September to February.* Forest, riverine scrub and bushveld. *Codd & Dyer 9182.*

W S C N E

glabrata Brummitt

(= *C. floribunda* Harv.)

Shrub or small tree, up to 3 m high. Leaflets minutely apiculate. Racemes in a leafless panicle. Flowers 8–9 mm long, drying pale yellowish white. Ovary glabrous. *Flowers yellow; October to January.* Riverbanks. *Galpin 13114.*

W S C N E

sericea Harv.

(= *C. mucronulata* Harms ex Kuntze,

= *C. obovata* Schinz)

Shrub, up to 1 m high, appressed silky in all parts. Leaflets obovate to elliptic, mucronulate, reticulate. *Flowers shorter than 10 mm when dried, yellow; November to April.* Riverbanks and streambanks. *Du Toit 109.*

W S C N E

Canavalia DC. (s. Afr.: 6 spp.) 3891000

Sauer. 1964. Brittonia 16: 106.

Verdcourt. 1971. F.T.E.A. 4: 571–577.

ensifomis (L.) DC.

(= *Dolichos ensiformis* L.)

Climber. Terminal leaflet elliptic to ovate-elliptic, 57–200 × 32–115 mm. Pods linear-oblong, 150–350 × 30–35 mm. Seeds white. *Flowers rose to purple; November.* Roadsides. *Porter sub Herb. Galpin 14859.*

W S C N E

rosea (Sw.) DC.

(= *Dolichos roseus* Sw.)

Climber. Terminal leaflet elliptic to almost round, 25–95 (–115) × 15–90 (–100) mm. Seeds brown with darker marbling or streaked pale yellow to almost black. *Flowers pink to purple; March.* Lowveld. *Galpin 866.*

W S C N E

virosa (Roxb.) Wight & Arn.

(= *C. ferruginea* Piper,

= *Dolichos virosus* Roxb.)

Perennial climber or twiner, up to 15 m high. Terminal leaflet broadly ovate, 70–150 (–170) × 50–100 (–120) mm. Pods linear-oblong, 120–165 × 30 mm. Seeds brown or reddish brown, marbled with black. *Flowers mauve and white; January to May.* Grassland, woodland, ravine banks and forest edges. *Codd 5428.*

W S C N E

Clitoria L. (s. Afr.: 1 sp.) 3857000

Verdcourt. 1971. F.T.E.A. 4: 515–518.

ternatea L.*(= *C. mearnsii* De Wild.,
= *C. zanzibarensis* Vatke)

Climber. Leaves pinnately 5–7-foliolate; leaflets elliptic, 30 × 25 mm. Pods linear-oblong, flattened, 60–125 × 7–12 mm, margined, apiculate, glabrous, yellowish brown. *Flowers blue; November to January.* Grassland and riverbanks. Region of origin uncertain. *Herman 124.*

W S C N E

Crotalaria L. (s. Afr.: 64 spp.) 3669000Verdoorn. 1928. Bothalia 2: 371–420.
Polhill. 1982. *Crotalaria* in Africa and Madagascar.**agatiflora Schweinf.***(= *C. megistantha* Taub.)

Bushy woody herb or shrub, up to 10 m high. Bracteoles shorter than 2.0(–3.5) mm. Leaflets ovate-elliptic, less than twice as long as broad, usually glabrous beneath. *Flowers bright yellow; January to May.* Grassland. Native elsewhere in Africa. *Duggan & Henderson 56.*

W S C N E

barkae Schweinf. subsp. barkae(= *C. geminiflora* Dinter ex Baker f.)

Annual or short-lived perennial herb, up to 1 m high. Stems patently pilose. Leaflets linear-lanceolate to elliptic. Pods ellipsoid-clavate, 15–26 mm long, glabrous to thinly pilose. *Flowers yellow; February to May.* Bushveld. *Galpin sub PRE 54623.*

W S C N E

brachycarpa (Benth.) Burt Davy ex I. Verd.(= *C. globifera* E. Mey. var. *brachycarpa* Benth.)

Numerous erect stems from woody rootstock, up to 500 mm tall. Leaflets oblanceolate, 8–20 × 3–8 mm. Bracts deciduous after flowering. Racemes terminal. Pods subglobose, 5–7 × 4–5 mm, thick-walled, ± rugose, appressed puberulous. *Flowers yellow; September to March.* Bushveld and grassveld. *Verdoorn & Dyer 3396.*

W S C N E

brevidens Benth. var. intermedia (Kotschy) Polhill(= *C. intermedia* Kotschy)

Annual or short-lived, perennial herb, up to 2 m high. Bracteoles inserted at base of calyx. Keel (1.4–)1.7–2.2 mm long, beak of keel straight not curved. Calyx appressed puberulous, 5–8 mm long. *Flowers yellow with brown veins; April.* Roadsides. Invader. *Grobbelaar 91.*

W S C N E

burkeana Benth.(= *C. burkeana* Benth. var. *sparsipila* Harv.)

Erect or decumbent perennial herb, up to 0.7 m high. Stems patently pilose. Leaflets 3–5, linear-lanceolate. Pods broadly oblong-clavate, subsessile (35–)40–55 mm long, pilose. *Flowers pale lemon-yellow or white*

with purple or red veins; October to May. Wooded grassland. *Hanekom 1872.*

W S C N E

capensis Jacq.

Bushy shrub, up to 3 m high. Stipules resembling small leaflets, stalked with a blade-like portion, main nerve of stipules median. Keel (15–)20–24 mm long. Pods pubescent. *Flowers yellow with red markings; November to June.* Grassland, bushveld and forest margins. *Hemm 534.*

W S C N E

damarensis Engl.(= *C. fleckii* Schinz,
= *C. marlothii* Engl.)

Annual or short-lived perennial herb, with an erect leading shoot up to 0.8 m and often long, decumbent lower branches. Stipules divided into (2)3 or 4 segments. Leaflets thinly hairy. Standard ovate or ovate-elliptic. Pods cylindrical, 23–28(–32) mm long, glabrous. *Flowers yellow; November to June.* Bushveld, woodland and riverbanks. *Codd 4270.*

W S C N E

distans Benth. subsp. distans

Erect or often rather spreading annual herb, up to 0.6 m high. Pods nearer oblong-ellipsoid, scarcely broadened apically. Racemes mostly 8–16-flowered. Keel 8–10 mm long. *Flowers yellow; February to April.* Wooded and open grassland, sometimes in damp places. *Codd 2648.*

W S C N E

distans Benth. subsp. mediocris Polhill(= *C. macaulayae* sensu I. Verd. non Baker f.)

Erect annual herb with ascending branches up to 0.7 m high. Racemes (10–)16–40-flowered. Keel 11–13(–14) mm long. Pods usually oblong, broadest near apex. *Flowers yellow; January to May.* Bushveld and mopani veld. *Codd 6611.*

W S C N E

doidgeae I. Verd.

Shrub, up to 2 m high. Leaflets thinly pubescent above, densely sericeous pubescent beneath. Standard densely hairy outside. Keel 11–30 mm long. Wings ± as long as hairy keel. Pods oblong-clavate, up to 50 mm long, densely pubescent to tomentellous. *Flowers yellow; November to May.* Bushveld and riverbanks. *Codd 7920.*

W S C N E

eremicola Baker f. subsp. eremicola(= *C. spinosa* Hochst. ex Benth. var. *schlechteri* Baker f.)

Shrublet, up to 400 mm tall. Stems spiny. Flowers 1 or 2 on slender patent spines bearing small leaves. Keel 5–6 mm long. Pods subsessile, globose, 4–7 mm across, appressed puberulous. *Flowers yellow; September to February.* Bushveld and grassland. *Mogg 37256.*

W S C N E

gazensis Baker f. subsp. **herbacea** Polhill

Herb with slender straggling or trailing stems. Petioles mostly not longer than 3 mm, often scarcely longer than stipules. Leaflets usually pointed, drying greenish. *Flowers yellow; January to February*. Bushveld. Breyer sub TRV 19421.

W	S	C	N	E
---	---	---	---	---

globifera E. Mey.

(= *C. cinerea* Burt Davy ex I. Verd.)

Numerous, erect, herbaceous stems from woody rootstock, up to 0.9 m high. Leaflets oblanceolate, 10–30 × 3–10 mm. Inflorescences terminal. Standard pubescent outside, at least medially. Pods obovoid, 7–13 × 4–7 mm, densely appressed puberulous. *Flowers yellow; December to March*. Grassland. Balsinhas 2880.

W	S	C	N	E
---	---	---	---	---

griquensis L. Bolus

Shrublet, up to 400 mm tall. Flowers (2–)4–6 on ± bluntly pungent leaf-opposed axes, branching divaricate. Pods ellipsoid to subglobose, 5–8 × 4.5–6.0 mm, appressed puberulous. *Flowers yellow; January to March*. Grassland. Burt Davy 13065.

W	S	C	N	E
---	---	---	---	---

laburnifolia L. subsp. **australis** (Baker f.) Polhill

(= *C. australis* (Baker f.) Baker f. ex I. Verd.)

Herbaceous shrublet, up to 1 m high. Leaves glaucous, petioles much longer than leaflets, thickened. Keel with upwardly directed subtruncate beak. Pods (80–)90–105 mm long with stipe 23–40 mm. *Flowers yellow; September to April*. Woodland and riverbanks. Germishuizen 127.

W	S	C	N	E
---	---	---	---	---

lanceolata E. Mey. subsp. **lanceolata**

(= *C. mossambicensis* Klotzsch)

Erect, laxly branched annual herb, up to 1.7 m high. Leaflets usually linear-lanceolate. Keel 6.5–9.0 mm long, shallowly rounded, rather shortly beaked, 4–5 (–6) mm wide. Pods 28–35 (–38) mm long. *Flowers yellow with reddish purple veins; November to June*. Disturbed places. Stirton 6813.

W	S	C	N	E
---	---	---	---	---

longidens Burt Davy ex I. Verd.

Shrubby, slightly woody herb, up to 1.5 m high. Petiole longer than leaflets, thickened. Racemes few-flowered, with slender markedly zig-zag rhachis. Pods oblong-clavate, 55–65 mm long. *Flowers yellow; January to March*. Bushveld and mountain veld. Meeuse 9889.

W	S	C	N	E
---	---	---	---	---

lotoides Benth.

Spreading or semidecumbent, perennial herb with stems 150–500 mm long. Stems densely subappressed

pubescent to patently pilose. Leaflets obovate to subcircular. Standard elliptic. Pods subcylindrical 24–36 × 7–8 mm. *Flowers yellow; September to April*. Grassland, waste places. Pienaar 711.

W	S	C	N	E
---	---	---	---	---

monteiroi Taub. ex Baker f. var. **monteiroi**

Erect shrub, up to 1 m high. Petioles 3–10 (–17) mm long. Leaflets 5–14 mm long. Bracts usually shorter than 2 mm. Keel 16–18 mm long. *Flowers yellow; January*. Grassland. Germishuizen 3475.

W	S	C	N	E
---	---	---	---	---

monteiroi Taub. ex Baker f. var. **galpinii** Burt Davy ex I. Verd.

(= *C. breyeri* N.E. Br.,

= *C. inhabilis* I. Verd.)

Shrub, up to 2 m high. Petioles 10–30 mm long, longer than leaflets. Leaflets (10–)15–30 mm long. Bracts (1.5–)2.0–3.0 mm long. Keel (16–)18–20 mm long. Pods swollen. *Flowers yellow with orange or brown markings; October to April*. Woodland and mopani veld. Van der Schijff 3866.

W	S	C	N	E
---	---	---	---	---

natalitia Meisn. var. **natalitia**

Woody herb or small shrub, up to 2.6 m high. Leaves 3-foliate, mostly in tufts. Standard subcircular. Pods broadly cylindrical, 34–40 (–45) × 11–13 mm, glabrous. *Flowers yellow; May to November*. Bushveld and forest margins. Hanekom 2277.

W	S	C	N	E
---	---	---	---	---

orientalis Burt Davy ex I. Verd. subsp. **orientalis**

Erect virgate herb, up to 1 m high. Leaflets usually mostly 0.8–2.5 mm wide. Standard glabrous to sparsely pubescent outside. Legume glabrous or early glabrescent (ovary glabrous to densely hairy). *Flowers yellow; January*. Grassland. Thode A1381.

W	S	C	N	E
---	---	---	---	---

orientalis Burt Davy ex I. Verd. subsp. **allenii** (I. Verd.) Polhill & A. Schreib.

Erect virgate herb, up to 1 m high. Leaflets usually mostly 2–9 mm wide. Standard extensively pubescent outside. Legume appressed puberulous. *Flowers yellow; November to March*. Grassland. Morgan 54.

W	S	C	N	E
---	---	---	---	---

pallida Aiton var. **pallida**

(= *C. mucronata* Desf.,

= *C. striata* DC.)

Erect, well branched herb, up to 2 m high. Leaflets elliptic, mostly 60–130 mm long, acute or rounded at apex. Raceme 150–300 mm long, many-flowered. Pods subcylindrical, 38–50 × 6–8 mm, puberulous. *Flowers yellow with reddish brown veins; March to November*. Forest margins and woodland, disturbed places. Van der Schijff 2471.

W	S	C	N	E
---	---	---	---	---

pisicarpa Welw. ex Baker(= *C. pilulicarpa* Taub.)

Annual herb with long trailing branches up to 0,6 m long or more. Leaflets appressed pilose. Racemes subumbelliform. Keel angular. Pods subglobose, 5–6(–7) × 4–6 × 4,5–6,0 mm, tardily dehiscent, densely hairy. *Flowers yellow with fine reddish brown veins; January to March.* Bushveld. *Germishuizen 328.*

W S C N E

podocarpa DC.

(= *C. hirsutissima* Schinz,
= *C. podocarpa* DC. var. *villosa* Schinz)

Annual herb, up to 0,7 m high. Stems usually spreading pilose. Lower branches spreading decumbent. Stipules entire. Pods broadly cylindrical, 20–30 × 9–14 mm. *Flowers yellow; October to February.* Woodland, disturbed places. *Codd 6589.*

W S C N E

recta Steud. ex A. Rich.

Shrub, branched in upper half, up to 2 m high. Stems hollow. Leaves obovate to elliptic, 20–140(–200) × 10–60 mm. Wings enveloping keel. Pods broadly oblong-clavate, 45–65 × 15–20 mm. *Flowers yellow with maroon or purple at base; January to May.* Grassland. *Kluge 485.*

W S C N E

rhodesiae Baker f.(= *C. natalitia* Meisn. var. *procumbens* Baker f.)

Herb, up to 500 mm tall. Stems trailing. Leaves mostly well spaced. Pods 20–27 × 8–10 mm with at least some hairs along upper side. *Flowers yellow; February to April.* Mopani veld. *Van Rooyen 3398.*

W S C N E

schinzii Baker f.

Dwarf shrub, up to 400 mm tall. Stems numerous from perennial rootstock. Bracts lanceolate to ovate-caudate, 15–30 mm long. Pods oblong-fusiform to subcylindrical, shortly pubescent. *Flowers yellow; October to May.* Bushveld and grassland. *Van der Schijff 1821.*

W S C N E

spartea Baker

Erect or straggling annual herb, up to 1,3 m high. Leaves simple, petiole very short, not jointed at top. Standard elliptic to obovate elliptic. *Flowers bright yellow with reddish brown veins.* Grassland. No specimens in PRE.

W S C N E

spartioides DC.

Virgate shrub, up to 0,5 m high. Stems ribbed. Leaves 1-foliolate, 0,8–2,5 mm wide. Keel angled in lower third, 11–17 mm long, beak of keel not twisted. Legume oblong-ellipsoid to shortly cylindrical, 10–12 × 5–6 mm. *Flowers bright yellow; September to March.* Sandy soil. *Brueckner 1150.*

W S C N E

sphaerocarpa Perr. ex DC. subsp. **sphaerocarpa**(= *C. nubica* Benth.)

Erect annual herb, up to 1 m tall. Racemes laxly 12- to many-flowered. Keel 5–7 mm long, hairy on sides. Pods oblong-ellipsoid, 5–7 × 3,5–4,5 mm, 1–4-seeded. *Flowers yellow; October to April.* Disturbed woodland, grassland and riverbanks. *Germishuizen 3413.*

W S C N E

steudneri Schweinf.

(= *C. hispida* Schinz,
= *C. tanganyikensis* Baker f.)

Ascending and spreading annual herb, up to 1 m high. Branches rather long-hispid with spreading hairs. Petioles shorter than leaflets. Keel ± as long as wings or longer. *Flowers yellow with reddish brown veins outside.* Woodland. *Rogers 20754A.*

W S C N E

vasculosa Wall. ex Benth.

Annual or perennial shrublet, up to 1 m high. Branches hirsute with tawny spreading hairs. Racemes densely many-flowered. Pods subcylindrical, furry tomentose with brownish hairs. *Flowers pale yellow with purplish veins; November.* Savanna. *Van Wyk 4045.*

W S C N E

virgulata Klotzsch subsp. **grantiana** (Harv.) Polhill(= *C. grantiana* Harv.)

Decumbent to erect annual or short-lived perennial herb, up to 1,8 m high. Lateral nerves usually visible on underside of leaflets. Supplementary inflorescences on filiform axes from near base of short shoots appearing axillary. Hairs whitish. *Flowers yellow; October to April.* Grassland, riverbanks and arid lowveld, sandy soil. *Van der Schijff 2237.*

W S C N E

Cullen Medik. (s. Afr.: 7 spp.)

3703010

Burr Davy. 1932. *Fl. Transv.* 2: 373–375.
Stirton. 1981. *Bothalia* 13: 317.

holubii (Burr Davy) C.H. Stirt.(= *Psoralea holubii* Burr Davy)

Herb or sprawling shrub, up to 300 mm tall. Leaflets crisped; terminal leaflet 18–20 mm long, glabrous or glabrescent, conspicuously black-dotted. Peduncle much exceeding subtending leaf. Calyx subglabrous, dotted with black glands. *Flowers laxly spiked, blue; January to April.* Black turf flats, among grass. *Codd 9387.*

W S C N E

obtusifolia (DC.) C.H. Stirt.(= *Psoralea obtusifolia* DC.)

Prostrate herb. Leaves greyish; terminal leaflet 8–15 mm long, densely silky, not conspicuously black-dotted. Inflorescence a few-flowered, subumbellate spike. Peduncle shorter than subtending leaf. Calyx villose

with white hairs. *Flowers mauve; March*. Flats of river silt, brakish, with scrub. *Codd & Dyer 3824*.

W S C N E

Dalbergia *L.f.* (s. Afr.: 7 spp.) 3821000

Polhill. 1971. F.T.E.A. 3,1: 95–112.

armata *E. Mey.*

Shrub, generally scandent, up to 15 m high. Leaflets oblong or elliptic-oblong, lateral leaflets 10–12(–16) on either side of rachis, $\pm$ 6–13 mm long, glabrous when mature. Inflorescence axes appressed puberulous to tomentellous. *Flowers dull yellow; September to November*. Woodland, bushland and thicket, usually on sandy soils. *Scheepers 749*.

W S C N E

melanoxylo *Guill. & Perr.*

Spiny shrub or tree, up to 12 m high. Leaves $\pm$ 60–220 mm long, with 4–6(–8) lateral leaflets on either side. Panicles laxly branched, up to 120 mm long. Fruit diffusely and rather irregularly veined. *Flowers white; October to November*. Woodland, bushland, wooded grassland, often in rocky places. *Story 3926*.

W S C N E

nitidula *Baker*

Shrub or small tree, up to 12 m high. Leaflets ovate to elliptic or elliptic-oblong, without incurved margins. Calyx usually tomentellous with short appressed hairs. Fruits 40–70 mm long. *Flowers white; September to October*. Woodland, grassland, rocky hills, granite outcrops. *Renny 259*.

W S C N E

obovata *E. Mey.*

(= *D. sessiliflora* Harms)

Small tree or shrub, sometimes scandent with aid of modified tendril-like branches, up to 5 m high. Lateral leaflets 2 or 3 on either side. Pedicels shorter than 1 mm. Fruits thickened, prominently veined over seed cavity, pubescent at least towards base. *Flowers 5–12 mm long, white; October to November*. Forest, riverine bushland or thicket, wooded grassland. *Kluge 2719A*.

W S C N E

sissoo *Roxb.**

Shrub or small tree, up to 5 m high. Leaflets abruptly acuminate, 40–55 $\times$ 30–40 mm. Panicles rather lax, axillary, (60–)100–150 mm long. Standard 9 mm long, longer than other petals. Calyx and peduncles sparsely pubescent. Fruits 60–70 $\times$ 8 mm, glabrescent. *Flowers pale yellow; October*. Sandveld, disturbed places. Native of India. *Van der Schijff 843*.

W S C N E

Decorsea *R. Vig.* (s. Afr.: 3 spp.) 3910030

Verdcourt. 1970. Kew Bull. 24,3: 442–447.

Verdcourt. 1971. F.T.E.A. 4: 611–613.

galpinii (*Burt Davy*) *Verdc.*

(= *Dolichos galpinii* Burt Davy)

Twining perennial herb. Leaves pinnately 3-foliolate, narrowly ovate. Flowers solitary in axils of leaves, pedunculate. Keel incurved. *Flowers blue or purple; October to January*. Grassland. *Van der Schijff 3232*.

W S C N E

schlechteri (*Harms*) *Verdc.*

(= *Phaseolus schlechteri* Harms)

Twining perennial herb. Leaves pinnately 3-foliolate, broadly ovate to ovate. Flowers in axillary fascicles. Keel incurved. *Flowers mauve; July to June*. Bushveld, mopani veld and riverbanks. *Long sub TRV 32267*.

W S C N E

Desmodium *Desv.* (s. Afr.: 12 spp.) 3807000

Schubert. 1971. F.T.E.A. 3,1: 451–479.

Schrire. 1988. Bothalia 18: 12.

adscendens (*Sw.*) *DC.* var. **robustum** *B.G. Schub.*

(= *Hedysarum adscendens* Sw.)

Stoloniferous herb. Inflorescence a terminal, loosely flowered raceme on $\pm$ erect branches arising from creeping stems. Pods with articles approximately obtriangular, 2,5–3,0 mm wide. *Flowers pale yellow; December*. Forest. *Gillett 3156*.

W S C N E

barbatum (*L.*) *Benth.* var. **dimorphum** (*Welw. ex*

Baker) *B.G. Schub.*

(= *D. dimorphum* Welw. ex Baker,

= *Nicolsonia barbata* (L.) *DC.* var. *dimorpha* (Welw. ex Baker) Schindl.)

Woody herb, up to 12 m high. Leaves variously 3- or 1-foliolate. Inflorescence spicate. Pedicels often dark-coloured, distally visibly deflexed. *Flowers light purple; February to April*. Woodland, along riverbanks. *Scheepers 241*.

W S C N E

dregeanum *Benth.*

(= *D. caffrum* (E. Mey.) Druce,

= *Nicolsonia caffra* E. Mey.)

Woody herb, up to 400 mm tall. Leaves 3-foliolate, conduplicate. Inflorescences densely capitate. Pedicels not obvious. Bracteoles 2, clasping calyx. *Flowers mauve; March*. Grassland. *Grobelaar 1104*.

W S C N E

gangeticum (*L.*) *DC.*

(= *D. natalium* Sond.,

= *Hedysarum gangeticum* L.)

Herb, up to 400 mm tall. Leaves unifoliolate; leaflets chartaceous, ovate or cordiform, with entire margins. Fruit up to 7- or 8-articled, deeply constricted. *Flowers purple; October to February*. Woodland. *Stalmans 1019*.

W S C N E

incanum DC.(= *D. canum* (J.F. Gmel.) Schinz & Thell.)

Herb, up to 500 mm tall. Stems straggling. Leaflets ovate, 35–65 × 15–30 mm, glossy dark green with characteristic light discoloration along midrib above. Pseudoracemes terminal. *Flowers pink; March*. Weed. *Clarke 1584*.

W S C N E

repandum (Vahl) DC.(= *D. scalpe* DC.,= *D. strangulatum* Wight & Arn.)

Perennial herb or slender shrub, up to 1 m high, climbing or scrambling and forming a dense undergrowth. Leaflets rhomboid, deep green venation craspedodromous. Inflorescence lax. Flowers 8–14 mm long. *Flowers orange or brick-red; December to May*. Forest margins and streambanks, in shade. *Stalmans 306*.

W S C N E

salicifolium (Poir.) DC. var. salicifolium

Shrub, up to 2 m high. Leaves 3-foliolate; leaflets distinctly saliciform. Pods with articles rectangular or oblong, not or slightly constricted at isthmi. *Flowers pink; September to November*. Riverbanks. *Buitendag 1155*.

W S C N E

setigerum (E. Mey.) Benth. ex Harv.(= *D. hirtum* Guill. & Perr.,= *Nicolsonia setigera* E. Mey.)

Prostrate, procumbent or erect herb, rooting from lower nodes. Fruit with articles U-shaped, 1.5–2.0 mm wide. *Flowers violet; December to June*. Forest margins, grassland and woodland. *Bos 1253*.

W S C N E

tortuosum (Sw.) DC.*(= *Hedysarum tortuosum* Sw.)

Herb, up to 2 m high. Leaves 3-foliolate. Stipules markedly auriculate at base on leaf-opposed margin. Fruit with articles orbicular to elliptic, strongly constricted at isthmi. *Flowers mauve and yellow; October*. Weed along cultivated lands. Native to tropics of the Old World. *Rabie 273*.

W S C N E

velutinum (Willd.) DC.(= *D. lasiocarpum* (P. Beauv.) DC.,= *Hedysarum velutinum* Willd.)

Tree, up to 1.2 m high. Leaflets crassate, velutinous, suborbicular, often with sinuate margins. Stipules abruptly narrowing from auriculate base to long slender apex. *Flowers blue or mauve-pink; April*. Woodland. *Van der Schijff 2659*.

W S C N E

Dichilus DC. (s. Afr.: 5 spp.)

3664000

Harvey. 1862. F.C. 2: 77.

Schutte & Van Wyk. 1988. S. Afr. J. Bot. 54,2: 182–186.

lebeckioides DC.

Many-stemmed perennial herb, up to 400 mm tall. Leaves of flowering branches alternate. Vestiture of short appressed hairs. Inflorescence a strictly leaf-opposed raceme. *Flowers yellow; November to April*. Grassland, vleis and riverbanks. *Gillett 1073*.

W S C N E

pilosus P. Conrath ex Schinz

Much-branched, hairy perennial herb, up to 300 mm tall. Leaves of flowering branches alternate. Vestiture of long spreading hairs. Inflorescence a strictly leaf-opposed raceme. *Flowers yellow; October to April*. Amongst rocks in grassland. *Germishuizen 4336*.

W S C N E

reflexus (N.E. Br.) A.L. Schutte(= *Argyrobium reflexum* N.E. Br.)

Many-stemmed perennial herb, up to 0.7 m high. Inflorescence a terminal raceme. Calyx long (more than half the length of the keel), with long-acuminate lobes. Standard ± glabrous. *Flowers yellow; October to February*. Grassland and streambanks. *Van der Schijff 1278*.

W S C N E

strictus E. Mey.

Many-stemmed, erect perennial herb, up to 1 m high. Inflorescence a terminal raceme. Calyx short (less than half the length of the keel), with short, acute lobes. Standard pubescent at apex. *Flowers yellow; November to March*. Grassland and streambanks. *Theron 1994*.

W S C N E

Dolichos L. (s. Afr.: 12 spp.)

3910000

Verdcourt. 1970. Kew Bull. 24,3: 411–442.

Verdcourt. 1971. F.T.E.A. 4: 674–696.

angustifolius Eckl. & Zeyh.

Suffrutex, up to 0.6 m high. Leaves 3-foliolate; leaflets narrow linear-lanceolate, 50–100 × 2–6 mm, complicate. *Flowers pink or mauve; August to April*. Grassland. *Comins 858*.

W S C N E

falciformis E. Mey.

Prostrate herb. Leaves 3-foliolate; terminal leaflet broadly ovate, 22–70 × 22–70 mm, petiolule 7–10 mm long. Pods scimitar-shaped. *Flowers purple; October to March*. Grassland. *Acocks 16606*.

W S C N E

junodii (Harms) Verdc.(= *Vigna junodii* Harms)

Twining perennial herb. Leaves 3-foliolate; terminal leaflet lanceolate to ovate-lanceolate, unilaterally or bilaterally hastate or not at all hastate. *Flowers purple or yellow*. Grassland. *Van der Schijff 2095*.

W S C N E

linearis *E. Mey.*

Twining perennial herb. Leaves 3-foliolate; leaflets linear-lanceolate or lanceolate, those of lower leaves often broadly lanceolate, not complicate. *Flowers purple; November to January.* Grassland. *Clarke 433.*

W S C N E

pratensis (*E. Mey.*) *Taub.*

Twining perennial herb. Leaves 3-foliolate; terminal leaflet halberd-shaped from cuneate base, 45–55 × 40–45 mm. Petiole up to 30 mm long. Stem 4-angled. *Flowers mauve; November.* Bushveld. *Hardy & De Villiers 5109.*

W S C N E

trilobus *L.* subsp. **transvaalicus** *Verdc.*

Climbing perennial herb. Stem rib-striate, patently hairy to glabrous. Terminal leaflet 3-lobed, rounded or acute, thinly appressed hairy, ± 25–40 × 20 mm. Inflorescence subumbellate, few- to 1-flowered. *Flowers dark pink with carmine eye spot; November to March.* Bushveld and lowveld. *Retief 500.*

W S C N E

Dumasia *DC.* (s. Afr.: 1 sp.)

3861000

Verdcourt. 1971. *F.T.E.A.* 4: 513–515.

villosa *DC.* var. **villosa**

Climbing perennial herb. Stems slender, covered with spreading, ferruginous hairs. Leaflets thin, ovate-oblong. Calyx tube with mouth obliquely truncate. Pods linear, with yellowish brown hairs. *Flowers yellow; December to April.* Forest margin and indigenous bush. *Landman 8.*

W S C N E

Eriosema (*DC.*) *G. Don* (s. Afr.:

36 spp.)

3898000

Verdcourt. 1971. *F.T.E.A.* 4: 761–805.

Stirton. 1981. *Bothalia* 13: 281–315.

Stirton. 1986. *Bothalia* 16: 11–22.

angustifolium *Burr Davy*

Suffrutex, up to 300 mm tall. Leaves 3-foliolate; leaflets linear-lanceolate, apex acute; terminal leaflets 70–100 × 10–12 mm. Inflorescences usually shorter than subtending leaves, 6–10-flowered. *Flowers yellow; October to December.* Grassland. *Stirton 1479.*

W S C N E

buchananii *Baker f.*

(= *E. richardii* Baker f. & M. Haydon var. *ovatum* Staner & De Craene)

Perennial herb, up to ± 0.6 m high. Stipules 10–16 mm long, 2.5–4.0 mm wide, oblong-lanceolate. Appendages of standard high up above middle, free, shallow-

ridged, half-moon-shaped, vertical to axis of standard. *Flowers pale pink, lined with purple; November to January.* Mountain sourveld. *Scheepers 814.*

W S C N E

burkei *Benth.*

Perennial herb, up to 300 mm tall. Stems ferruginous-tomentose. Leaflets with undersurface prominently rugose-reticulate. Inflorescence exceeding subtending leaf. *Flowers yellow; September to January.* Grassland. *Scheepers 488.*

W S C N E

cordatum *E. Mey.*

Perennial herb, up to 0.6 m high. Leaflets with base cordate or obtuse. Stipules connate. Calyx teeth lanceolate, always longer than calyx tube, stiffly shaggy or pilose. *Flowers red and yellow; September to January.* Grassland, rocky hillsides. *Stirton 1300.*

W S C N E

distinctum *N.E. Br.*

Perennial herb, up to 230 mm tall. Leaves 3-foliolate; leaflets 50–150 × 25–350 mm, oblong to obovate-oblong. *Flowers orange-red.* Grassland. *Hutchinson 1986.*

W S C N E

ellipticifolium *Schinz*

(= *E. nanum* Burr Davy)

Dwarf perennial herb with several erect stems, up to 80 mm tall. Leaflets narrowly ovate to elliptic, 45–50 × 17–22 mm. Stipules prominent, 8–18 mm long, lanceolate to ovate-lanceolate. Flowers reflexed. *Flowers yellow; November to April.* Grassland. *Stirton 1441.*

W S C N E

gunniae *C.H. Stirt.*

Perennial herb, up to 150 mm tall. Stems covered with straw-coloured hairs. Leaves mostly 1-foliolate, 60–90 × 25–30 mm, narrow-elliptic to narrow-ovate. Racemes 10–15-flowered. *Flowers yellow; October to February.* Grassland. *Stirton 1482.*

W S C N E

kraussianum *Meisn.*

Perennial herb, up to 300 mm tall. Terminal leaflet obovate to oblanceolate, 25–50 × 7–12 mm. Flowers usually appearing with or before leaves. Calyx canescent or fuscous hairy. *Flowers lemon-yellow; October to November.* Grassland. *Devenish 164.*

W S C N E

lucipetum *C.H. Stirt.*

Perennial herb with stems erect or decumbent, up to 300 mm tall. Stipules free. Racemes axillary, (10–)20–40-flowered, exceeding leaves. Peduncle 50–120 mm long. Calyx teeth lanceolate, longer than calyx tube. *Flowers yellow; November to February.*

Grassland, rocky banks and roadsides. *Germishuizen* 2987.

W S C N E

naviculare C.H. Stirt.

Erect perennial herb, up to 500 mm tall. Stems 1–5, minutely clothed in white hairs. Leaves 3-foliolate; terminal leaflet 72–100 × 41–63 mm; leaflets felt-like with raised veins below. *Flowers yellow; October.* Bushveld. *Stirton* 9829.

W S C N E

nutans Schinz

(= *E. richardii* Baker f. & M. Haydon)

Perennial herb or subshrub, up to 1,2 m high. Stipules mostly erect, clasping stem. Petiole 3,1–7,7 mm long. Flowers 7,5–10,0 mm long. Standard oblong. *Flowers yellow; January to April.* Bushveld and open grasslands. *Stalmans* 1125.

W S C N E

parviflorum E. Mey.

(= *E. consanguineum* Klotzsch)

Spreading perennial suffrutex, up to 0,6 m high. Leaves photonastic; leaflets finely pubescent on both surfaces. Stipules recurved and spreading when old. Flowers 5–6 mm long. *Flowers greenish yellow; December.* Riverbanks. *Smuts & Gillett* 3287.

W S C N E

pauciflorum Klotzsch

(= *E. oblongum* Harv.)

Suffrutex, up to 0,3 m tall. Stems patently ferruginous hairy. Terminal leaflet oblong, 35–60 × 10–15 mm, rugose with impressed nerves above, nerves below grey-villous, raised. *Flowers yellow; August to February.* Bushveld and grassland. *Buitendag* 1191.

W S C N E

psoraleoides (Lam.) G. Don

(= *Crotalaria psoraleoides* Lam.,

= *E. cajanoides* (Guill. & Perr.) Hook. f.)

Perennial shrub or subshrub, up to 2 m high. Leaves greyish green; leaflets narrowly obovate to elliptic. Stipules minute, shorter than 5 mm. Peduncle less than one-third the length of inflorescence. *Flowers yellow; October to March.* Open woodland and roadsides. *Codd* 5181.

W S C N E

salignum E. Mey.

Suffrutex, up to 0,6 m high. Stem, petioles and peduncles canescent-sericeous. Leaflets linear-lanceolate, up to 100 mm long, green above, silky white and penninerved beneath. *Flowers yellow and red; October to March.* Grassland. *Germishuizen* 3378.

W S C N E

transvaalense C.H. Stirt.

Perennial herb, up to 150 mm tall. Stems many, matted, prostrate or decumbent, branching at base, finely pu-

bescent with reflexed yellowish hairs. Leaflets broadly ovate, cordate at base. *Flowers pale pink and yellow; October to January.* Grassland. *Stirton* 1438.

W S C N E

Erythrina L. (s. Afr.: 11 spp.)

3870000

Codd. 1956. Bothalia 6: 507.

Franklin Hennessy. 1991. Bothalia 21: 1–17.

humeana Spreng.

(= *E. humei* E. Mey.,

= *E. humei* E. Mey. var. *raja* (Meisn.) Harv.)

Shrub or small tree, up to 4 m high. Leaflets tapering and long-acuminate at apex, terminal ones 50–120 × 30–70 mm, armed with a few prickles on veins beneath. *Flowers scarlet; November to April.* Bushveld, rocky hillsides. *Bredenkamp* 1480.

W S C N E

latissima E. Mey.

(= *E. gibbsiae* Baker f.,

= *E. sandersonii* Harv.)

Tree, up to 8 m high, young parts clothed with woolly hairs. Terminal leaflets ± rotund, broader than long, 150–200 mm wide. Standard 40–55 mm long. *Flowers scarlet; August to October.* Grassland, often on rocky slopes. *Onderstall* 740, *Van der Schijff* 1126.

W S C N E

lysistemom Hutch.

(= *E. caffra* Thunb. var. *mossambicensis* Baker f.)

Tree, up to 9 m high. Leaves ovate, apex tapering. Flowers declined towards rhachis. Standard long and narrow, 37–68 × 15–29 mm, slightly arcuate, enclosing stamens. *Flowers scarlet; July to October.* Woodland, wooded hillsides and streambanks. *Codd* 8003, *Germishuizen* 350.

W S C N E

zeyheri Harv.

Suffrutex, up to 400 mm tall. Leaflets blunt or merely pointed at apex, terminal one 100–300 × 50–250 mm, armed with prickles on veins above and beneath. Peduncles longer than aerial stems. *Flowers blood-red; October to December.* Grassland. *Codd* 10080.

W S C N E

Flemingia Roxb. ex Aiton f. (s. Afr.:

1 sp.)

3899000

Verdcourt. 1971. F.T.E.A. 4: 805–807.

grahamiana Wight & Arn.

Herb or scarcely woody subshrub, up to 1,8 m high. Leaflets 3, usually paler beneath, pubescent to densely velvety, sparsely to densely covered with small dark red glands. Pods 9–12 mm long, 6 mm wide, yellowish pubescent. *Flowers green, yellowish, white or pink; May to September.* Grassland. *Hanekom* 2315.

W S C N E

Galactia P. Browne (s. Afr.: 2 spp.) 3882000

Verdcourt. 1971. F.T.E.A. 4: 578–581.

tenuiflora (Willd.) Wight & Arn. var. villosa (Wight & Arn.) Benth.

Twiner. Leaflets ovate to oblong, emarginate, usually hairy beneath. Inflorescence a raceme, flowers in groups of 1–3. Pods linear-oblong, 30–60 mm long, adpressed pubescent. *Flowers yellow, pink or purple; November to February.* Grassland and riverbanks. *Codd 5671.*

W S C N E

Indigastrum Jaub. & Spach (s. Afr.: 7 spp.) 3702030

Schrire. 1992. Bothalia 22: 167–170.

argyraeum (Eckl. & Zeyh.) Schrire(= *Indigofera argyraea* Eckl. & Zeyh.)

Prostrate perennial herb. Terminal leaflet up to 3 mm long; undersurface of leaflets greyish tomentose. Inflorescence sessile. Petals completely glabrous. *Flowers mauve; March.* Grassland. *Zambatis 16.*

W S C N E

burkeanum (Benth. ex Harv.) Schrire(= *Indigofera affinis* Harv.,= *Indigofera burkeana* Benth. ex Harv.)

Perennial herb, up to 450 mm tall. Leaves greenish yellow to grey. Inflorescence densely many-flowered, crowded at end of branches. Petals completely glabrous. *Flowers bright orange; October to December.* Grassland. *Clarke 260.*

W S C N E

costatum (Guill. & Perr.) Schrire subsp. macrum (E. Mey.) Schrire

Herb, sometimes with prostrate branches, up to 300 mm tall. Leaflets usually 7 to a leaf. Flowers in long-stalked inflorescences. Calyx lobes 1.5–2.0 mm long. Petals completely glabrous. Pods reflexed. *Flowers mauve; October to March.* Thorn-tree veld and grassland. *Van Wyk 4003.*

W S C N E

fastigiatum (E. Mey.) Schrire(= *Indigofera fastigiata* E. Mey.)

Slender, erect herb, up to 500 mm tall. Inflorescence with long peduncle. Peduncle up to 150 mm long. Petals completely glabrous. *Flowers reddish pink; October to March.* Montane grassland. *Crawford 428.*

W S C N E

parviflorum (B. Heyne ex Wight & Arn.) Schrire subsp.**parviflorum var. parviflorum**(= *Indigofera parviflora* B. Heyne ex Wight & Arn. var. *parviflora*)

Annual herb, up to 400 mm tall. Leaflets long, narrow. Inflorescence short, sessile. Petals completely glabrous.

Pods long, narrow, reflexed. *Flowers pink or purple; February to April.* Grassland. *Hanekom 1709.*

W S C N E

Indigofera L. (s. Afr.: 201 spp.) 3702000

Harvey. 1862. F.C. 2: 163–203.

Schreiber. 1970. F.S.W.A. 60: 38.

Schrire & Germishuizen. 1993. Pers. comm.

Groups defined according to
Schrire & Germishuizen (pers. comm.).

Group 1. Plants all woody; no brown hairs on back of standard; flowers fairly large; pods usually patent (*I. lyallii* subsp. *lyallii*).

Group 2. Plants woody; brown hairs on standard always present; pods usually deflexed downwards; flowers usually smaller (*I. arrecta*, *I. cryptantha* var. *cryptantha*, *I. homblei*, *I. ormocarpoides*, *I. subcorymbosa* var. *eylesii*, *I. swaziensis* var. *swaziensis*, *I. swaziensis* var. *perplexa*, *I. tinctoria* var. *arcuata*).

Group 3. Plants mostly herbaceous; brown hairs absent from back of standard; pods tetraginous (*I. lupatana*, *I. trita* subsp. *scabra*, *I. trita* subsp. *subulata*).

Group 4. Plants with short staminal sheath; flowers small, white to pink; pods short (*I. laxeracemosa*, *I. vicioides* var. *vicioides*, *I. vicioides* var. *rogersii*).

Group 5. Leaflets hairy; stipules broad (*I. inhambanensis*).

Group 6. Inflorescences short, not longer than leaves; glandular hairs often present; leaflets obovate, rather broad (*I. buchananii*, *I. crebra*, *I. hilaris*, *I. hybrida*).

Group 7. Black 'pearl bodies' between leaflets; calyx lobes long; ovary short; staminal sheaths short and long; leaf surface glabrous or hairy (*I. atrata*, *I. commixta*, *I. comosa*, *I. confusa*, *I. egens*, *I. melanadenia*, *I. mollicoma*, *I. oxytropis*, *I. pongolana*, *I. reducta*, *I. rehmannii*, *I. sanguinea*, *I. setiflora*, *I. velutina*).

Group 8. Brown hairs present on back of standard; large flowers with short calyx; long pedicels present; staminal sheath longer than 7 mm; pods long, cylindrical, brown hairy, held suberect or patent (*I. densa*, *I. dregeana*, *I. frondosa*, *I. hedyantha*, *I. inyangana*, *I. rostrata*, *I. tristoides*).

Group 9. Plants leafy with inflorescences among leaves; peduncles not longer than leaves; brown hairs present on back of standard; pedicels long; remainder of persistent bracts on pedicels (*I. obscura*, *I. placida*).

Group 10. Peduncles longer than leaves; brown hairs present on back of standard; pedicels long; inflorescences borne far beyond leaves; pods becoming erect (*I. amitina*, *I. evansiana*, *I. filipes*, *I. floribunda*, *I. galpinii*, *I. lepida*, *I. masoniae*, *I. ripae*, *I. schinzii*, *I. zeyheri*).

Group 11. Inflorescences long, dense; calyx lobes long; ovary short; pods short, black, hairy (*I. astragalina*, *I. longebarbata*).

Group 12. Inflorescences longer than leaves; peduncles long; glandular hairs usually present (*I. adenoides*, *I. aquae-nitentis*, *I. colutea*, *I. delagoensis*, *I. dolichothyrsa*, *I. enormis*, *I. heterotricha*, *I. ingrata*, *I. lydenburgensis*, *I. sordida*).

Group 13. Inflorescences short, not leafy; pods patent (*I. bainesii*, *I. nebrowniana*).

Group 14. Leaves alternate; inflorescences sessile in axils of leaves; pods patent to erect, not deflexed (*I. flavicans*).

Group 15. Pods flattened, deflexed (*I. charlieriana* var. *charlieriana*, *I. circinnata*, *I. holubii*, *I. rhytidocarpa* subsp. *rhytidocarpa*, *I. sessilifolia*, *I. torulosa* var. *torulosa*, *I. torulosa* var. *angustiloba*).

Group 16. Leaflets alternate; inflorescences pedunculate; pods strongly reflexed (*I. alternans* var. *alternans*, *I. daleoides* var. *daleoides*, *I. oxalidea*, *I. schimperii* var. *schimperii*, *I. schimperii* var. *bankiana*, *I. spicata*).

Group 17. Stipules large; leaves 3-foliolate; peduncles long; pods sharply reflexed, hairy (*I. dimidiata*).

Group 18. Leaflets single; petals glabrous; pods often at right angles to pedicels, not reflexed (*I. pseudo-indigofera*).

Group 19. Miscellaneous (*I. leendertziae*).

adenoides Baker f.

Shrublet or sometimes with prostrate stems, up to 400 mm tall. Stems, leaf rachis, racemes and pods covered with short dark glands. Leaflets obovate, 5–7 mm long, upper surface glabrous. Staminal sheath 3 mm long. *Flowers red; November to May.* Grassland, between rocks. *Elan-Puttick 36.*

W S C N E

alternans DC. var. *alternans*

Prostrate perennial herb. Leaflets alternate, terminal leaflet obovate, up to 10 mm long. Pods reflexed, up to 10 mm long. *Flowers purple or pink; December to March.* Bushveld, red sandy soil, disturbed places. *Barker 439.*

W S C N E

amitina N.E. Br.

Shrublet, up to 1.5 m high. Bud with acutely shaped tip. Leaves greyish green. Inflorescence twice the length of the leaves. Pedicels 3 mm long. Standard with golden-brown hairs on back. Staminal sheath 4 mm long. *Flowers red; February.* Grassland. *Grobbelaar 945.*

W S C N E

aquae-nitentis Bremek.

Shrublet, up to 500 mm tall. Leaflets obovate, 5.5 × 2.0 mm, apex rounded. Raceme axillary, ± 200 mm long, densely flowered. Calyx 3.5 mm long. Corolla 9–10 mm long. *Flowers red.* No specimens in PRE.

W S C N E

arrecta Hochst. ex A. Rich.

Erect, semiwoody dwarf shrub, up to 2 m high. Leaflets narrowly elliptic-oblong, up to 20 × 7 mm. Calyx brown strigulose. Often drying black. Pods reflexed, straight, up to 20 mm long. *Flowers dull white to pink; November to May.* Bushveld, thorn scrub and grass along streambanks. *Van Wyk 4072.*

W S C N E

astragalina DC.

Herb, up to 300 mm tall, hairy. Terminal leaflet longer than 10 mm. Pods relatively short, 15 mm long, very

hairy, densely arranged along inflorescence axis, reflexed. *Flowers red; January to August.* Lowveld, sandy soil along streambeds. *Codd 5506.*

W S C N E

atrata N.E. Br.

Perennial herb, up to 500 mm tall. Red clumps of glands between leaflets. Terminal leaflet narrowly obovate, up to 20 mm long. Flowers 8–10 mm long. Pods short, 7–10 mm, not reflexed. *Flowers deep pink or red; December to March.* Grassland. *Clarke 1730.*

W S C N E

bainesii Baker

(= *Amphinomia bainesii* (Baker) A. Schreib.)

Prostrate or procumbent, herbaceous perennial herb, up to 300 mm tall. Calyx and pod densely hairy, at least when young. Calyx lobes triangular. *Flowers relatively small, congested, yellow; September to May.* Open grassland. *De Winter 715.*

W S C N E

buchananii Burtt Davy

Erect herb, up to 400 mm tall. Leaves simple, linear, up to 60 mm long. Inflorescence shorter than or as long as leaves. Pods patent. *Flowers red; November to December.* Grassland. *Sidey 1544.*

W S C N E

charlieriana Schinz var. *charlieriana*

Prostrate to erect herb, up to 300 mm tall. Leaflets long and narrow, 30 × 1.5–2.0 mm. Pods flat, reflexed, linear with ridge down middle, 20–30 mm long. *Flowers pink or purple; January to March.* Grassland. *Reid 717.*

W S C N E

circinnata Benth. ex Harv.

Dwarf shrub, up to 300 mm tall, apiny. Young stems whitish tomentose. Pods circinnate, almost coiled, reflexed, flat, seeds can often be seen bulging. *Flowers yellow and red; November to April.* Scrub and woodland on stony slopes. *Germishuizen 3408.*

W S C N E

colutea (Burm. f.) Merr.

Erect herb, up to 200 mm tall. Glandular hairs on stem, leaf rachis and inflorescence axis. Leaflets small, obovate, 6–7 mm long, upper surface hairy. Staminal sheath 2.5–3.0 mm long. Pods patent. *Flowers orange.* Lowveld. *Grobbelaar 1384.*

W S C N E

commixta N.E. Br.

Dwarf shrub, up to 300 mm tall. Red clumps of glands between leaflets. Upper surface of leaflets black gland-dotted. Flowers small. Staminal sheath 3 mm long. Pods short and hairy, not reflexed. *Flowers pinkish red; February.* Grassland. *Acocks 19158.*

W S C N E

comosa N.E. Br.

Small shrub, up to 1 m high. Red clumps of glands between leaflets. Lateral leaflets in 7 or 8 pairs, usually folded. Racemes 20–70 mm long, exceeding leaves. Bracts long. Pods short and hairy, not reflexed. *Flowers red; August to April*. Grassland. *Sidey 1311*.

W	S	C	N	E
---	---	---	---	---

confusa Prain & Baker f.

(= *I. pretoriana* Harms)

Perennial herb, up to 300 mm tall. Red clumps of glands between leaflets. Leaflets narrowly obovate, usually curved. Pods short, up to 8 mm long, hairy, not reflexed. *Flowers brick-red; October to February*. Grassland and bushveld, rocky slopes. *Acocks 24433*.

W	S	C	N	E
---	---	---	---	---

crebra N.E. Br.

Perennial herb, up to 300 mm tall, glandular hairy. Leaflets up to 8 mm broad. Inflorescence shorter than or equalling leaves. Pods patent. *Flowers orange-red; October*. Grassland. *Mauve 4409*.

W	S	C	N	E
---	---	---	---	---

cryptantha Benth. ex Harv. var. **cryptantha**

Dwarf shrub, up to 0,6 m high. Leaflets narrow, 3 mm broad. Standard with brown hairs on back. Pods reflexed, sickle-shaped, deeply constricted between seeds. *Flowers pinkish red; November to February*. Grassland. *Hanekom 1997*.

W	S	C	N	E
---	---	---	---	---

daleoides Benth. ex Harv. var. **daleoides**

(= *I. dodecaphylla* Ficalho & Hiern)

Perennial herb, up to 360 mm tall, often with trailing stems. Leaflets alternate, greyish green, coarsely hairy; terminal leaflet up to 12 mm long. Inflorescence dense. Pods reflexed, up to 15 mm long. *Flowers red; September to February*. Grassland, rocky slopes and sandy soil. *Huntley 1235*.

W	S	C	N	E
---	---	---	---	---

delagoaensis Baker f. ex J.B. Gillett

Herb, up to 300 mm tall. Glandular hairs on stems and leaf rhachis. Leaflets broad, up to 10 mm in width. Inflorescence dense, bracts long. *Flowers red; October to March*. Bushveld and grassland. *Brendenkamp 1253*.

W	S	C	N	E
---	---	---	---	---

densa N.E. Br.

Erect perennial herb, up to 500 mm tall. Leaflets narrow, pale green above, darker below. Inflorescence few-flowered. Flowers sessile. Standard with brown hairs on back. Persistent staminal sheath longer than 6–7 mm. *Flowers red; February*. Grassland. *Germis-huizen 134*.

W	S	C	N	E
---	---	---	---	---

dimidiata Vogel ex Walp.

Semi-erect herb, up to 200 mm tall. Foliar stipules large, up to 15 mm long. Terminal leaflet obovate to narrowly obovate, up to 30 mm long. Inflorescence twice as long as leaves. *Flowers red; October to February*. Grassland. *Leendertz 3575*.

W	S	C	N	E
---	---	---	---	---

dolichothyrsa Baker f.

Small slender shrub, up to 1 m high. Leaves greyish tomentose; leaflets obovate, up to 10 mm long. Stem and leaf rhachis with glandular hairs. Flowers $\pm$ 10 mm long. *Flowers orange-pink; March to April*. Rocky slopes and dense mopani veld on red, sandy flats. *Codd & Dyer 3808*.

W	S	C	N	E
---	---	---	---	---

dregeana E. Mey.

Dwarf shrub, up to 500 mm tall. Leaflets pale green above, darker and hairy below; terminal leaflet narrowly obovate, up to 17 mm long. Standard with brown hairs on back. Staminal sheath longer than 6–7 mm. Long cylindrical, patent to erect pods. *Flowers red or purple; November to January*. Grassland. *Henrici 1427*.

W	S	C	N	E
---	---	---	---	---

egens N.E. Br.

Small shrub, up to 1 m high. Red clumps of glands between leaflets. Leaflet pairs 2 or 3. Pods short, 7–8 mm, hairy, not reflexed. *Flowers red or pink; September to March*. Mixed bushveld, stony, rocky hillsides. *Balsinhas 3023*.

W	S	C	N	E
---	---	---	---	---

enormis N.E. Br.

Herb, up to 250 mm tall. Stems and leaves tomentose. Leaflets folded, small, 6–7 mm long, obovate, apex scarcely or not recurved, never hooked. *Flowers red; December to March*. Grassland. *Schlechter 4376*.

W	S	C	N	E
---	---	---	---	---

evansiana Burt Davy

Woody herb with prostrate stems. Leaflets greyish, small, 5–7 mm long, 6 or 7 pairs along rhachis. Standard with brown hairs on back. Staminal sheath shorter than 6 mm. Inflorescence short. *Flowers red; November to March*. Dense grassland in vleis on black clay soil. *Codd 2677*.

W	S	C	N	E
---	---	---	---	---

filipes Benth. ex Harv.

Herb or small shrub, up to 1 m high. Leaflets very narrow, $\pm$ 6–15 times as long as wide. Pedicels $\pm$ 3 mm long. Standard with brown hairs on back. Staminal sheath shorter than 6 mm. Inflorescence twice as long as leaves. *Flowers pinkish red; December to April*. Grassland and woodland. *Ubbink 621*.

W	S	C	N	E
---	---	---	---	---

flavicans Baker

Prostrate herb. Young parts lemon-yellowish hairy. Terminal leaflet blade elliptic, up to 55 mm long; 1 lateral leaflet often lacking. Pods patent, hairy, up to 10 mm long. *Flowers pink or red; November to April.* Bushveld and woodland. *Grobbelaar 937.*

W	S	C	N	E
---	---	---	---	---

floribunda N.E. Br.

Erect herb, up to 400 mm tall. Leaflets 8–13 mm long, 4–9 mm broad, elliptic or obovate. Standard with brown hairs on back. Staminal sheath shorter than 6 mm. Racemes 3 or 4 times as long as leaves. *Flowers pink or purple; February.* Margins of pine forest. *Maggs 61.*

W	S	C	N	E
---	---	---	---	---

frondosa N.E. Br.

Small shrub, up to 1 m high. Leaflets narrowly obovate, 2 mm broad, 10–12 mm long. Standard with brown hairs on back. Staminal sheath 7–10 mm long. Pods $\pm$ 25 mm long, slender, patent to erect. *Flowers red; December to February.* Grassland and streambanks. *Galpin 13351.*

W	S	C	N	E
---	---	---	---	---

galpinii N.E. Br.

Herb, up to 0.6 m high. Leaflets elliptic; terminal leaflet up to 15 mm long. Inflorescence twice as long as leaves. Standard with brown hairs on back. *Flowers mauve; September to February.* Lowveld, disturbed places. *Williamson 242.*

W	S	C	N	E
---	---	---	---	---

hedyantha Eckl. & Zeyh.

(= *I. goetzei* Harms)

Herb, up to 400 mm tall. Branches numerous from woody rootstock. Peduncles much longer than leaves. Standard with brown hairs on back. *Flowers crimson-red; August to December.* Dense grassland, rocky slopes. *Germishuizen 2878.*

W	S	C	N	E
---	---	---	---	---

heterotricha DC.

(= *I. rudis* N.E. Br.)

Dwarf shrub, up to 400 mm tall. Glandular hairs on stem, leaf rachis and sometimes on leaflets, hairs in between. Leaflets small, up to 6 mm long, obovate. Inflorescence longer than leaves. Flowers 7–9 mm long. Pods patent. *Flowers red or pink; November to March.* Grassland. *Codd & Dyer 4640.*

W	S	C	N	E
---	---	---	---	---

hilaris Eckl. & Zeyh.

(= *I. similis* N.E. Br.,
= *I. wentzeliana* Harms)

Herb, up to 300 mm tall, densely hairy, with numerous stems from woody rootstock. Inflorescence shorter than leaves or slightly longer. Calyx teeth longer than tube. Pods patent. *Flowers deep pink; August to December.* Grassland. *Hanekom 1855.*

W	S	C	N	E
---	---	---	---	---

holubii N.E. Br.

Prostrate herb. Leaflets narrow, 3–4 mm broad. Calyx lobes long, setaceous. Pods hairy, flat, reflexed, straight. Seeds can be seen bulging. *Flowers red; January to May.* Bushveld, disturbed places and sandy soil. *Codd 6625.*

W	S	C	N	E
---	---	---	---	---

homblei Baker f. & Martin

(= *I. garkeana* auct. non Vatke)

Shrub, up to 2 m high. Leaflets discolorous, up to 30 mm long. Inflorescence axis densely flowered. Standard with brown hairs on back. Pods reflexed, up to 30 mm long. *Flowers red; January to February.* Hillsides. *Stirton & Germishuizen 6914.*

W	S	C	N	E
---	---	---	---	---

hybrida N.E. Br.

Herb, up to 400 mm tall. Stems several from perennial rootstock, minutely adpressed-pubescent. Leaves 15–30 mm long; leaflets 3–11 (mostly 7–9), linear-cuneate, folded. *Flowers purple.* Grassland. *Du Toit 20A.*

W	S	C	N	E
---	---	---	---	---

ingrata N.E. Br.

Herb, up to 300 mm tall, with yellow pubescence on stem and leaves. Leaves with 7–11 small elliptic or obovate leaflets, not more than twice as long as broad. *Flowers pink; November.* Bushveld. *Zwanziger 425.*

W	S	C	N	E
---	---	---	---	---

inhambanensis Klotzsch

(= *I. polycarpa* Benth. ex Harv.)

Erect, slender, dwarf shrub, up to 300 mm tall. Terminal leaflet blade elliptic to obovate, up to 20 mm long. Foliar stipules prominent, up to 7 mm long. Inflorescence short, in axil of leaf. *Flowers deep pink; February to March.* Bushveld, sandy flats. *Codd 4232.*

W	S	C	N	E
---	---	---	---	---

inyangana N.E. Br.

Perennial herb, up to 250 mm tall. Leaves 8–15 mm long; leaflets 7–13-foliate, 5.0–8.5 $\times$ 2 mm. Racemes axillary, 75 mm long. *Flowers reddish pink; December to February.* Mountain grassland. *Coetzer 139.*

W	S	C	N	E
---	---	---	---	---

laxeracemosa Baker f.

Erect or prostrate herb, up to 300 mm tall, weedy. Flowers short, 3 mm long. Pods short, patent, with rounded apices, glabrous. *Flowers white or pink.* Woodland. *Meeuse 10023.*

W	S	C	N	E
---	---	---	---	---

leendertziae N.E. Br.

Dwarf shrub, up to 400 mm long. Leaflets glabrous on upper surface, oblong. Fruiting racemes 30–40 mm long and usually longer than leaves. Pods reflexed, flat, 2-seeded. Seeds can be seen bulging. *Flowers orange; March.* Woodland. *Du Toit 237.*

W	S	C	N	E
---	---	---	---	---

lepida N.E. Br.

Erect shrublet, up to 400 mm tall. Leaves 15–30 mm long, ascending; leaflets linear, 6–18 × 1–2 mm, glabrous above, thinly and inconspicuously adpressed-pubescent beneath. Corolla 6 mm long. Racemes 70–140 mm long. *Flowers red*. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

longebarbata Engl.

(= *I. schlechteri* Baker f.)

Dwarf shrub, up to 300 mm tall, hairy. Leaflets elliptic to obovate, 8–10 mm long. Pods relatively short, hairy, reflexed. *Flowers red; January to February*. Grassland. *Balsinhas* 2929.

W	S	C	N	E
---	---	---	---	---

lupatana Baker f.

(= *I. commiphoroides* Chiov.,
= *I. goniocarpa* Baker f.)

Slender, erect shrub, up to 2 m high. Standard without brown hairs. Pods subtetragonous, straight, reflexed. *Flowers red; January to February*. Woodland and wooded kloofs. *Codd* 5259.

W	S	C	N	E
---	---	---	---	---

lyallii Baker subsp. **lyallii**

(= *I. obermeijerae* Bremek.)

Shrub or small tree, up to 1.5 m high. Leaves with many leaflets; leaflets hairy. Standard petal white, dorsally hairy. Pods glabrous, 25–30 mm long. *Flowers purple; December to February*. Woodland, forest margins and wooded hillsides. *Hemm* 123.

W	S	C	N	E
---	---	---	---	---

lydenburgensis N.E. Br.

Dwarf shrub, up to 500 mm tall. Glandular hairs on stem and peduncle. Leaflets obovate, ± 5 mm long, greyish green. Staminal sheath 4–5 mm long. Inflorescence longer than leaves. *Flowers pink; December to January*. Lowveld, waste ground. *Edwards* 398.

W	S	C	N	E
---	---	---	---	---

masoniae N.E. Br.

Small shrub, up to 1 m high. Leaflets narrowly ovate; terminal leaflets twice or more the length of lateral leaflets. Inflorescence twice as long as leaves. Standard with brown hairs on back. Pods slender, glabrous, patent. *Flowers bright pink; December to March*. Grassland, between rocks. *Van Wyk* 800.

W	S	C	N	E
---	---	---	---	---

melanadenia Benth. ex Harv.

(= *I. malacostachys* Benth. ex Harv.)

Erect, woody herb, up to 1 m high, densely greyish pubescent, short-flowered. Red clumps of glands between leaflets. Leaflets 10–13 × 4–6 mm. Pods hairy, 6–8 mm long. *Flowers red; October to February*. Riverine bush, rocky slopes. *Jacobsen* 815.

W	S	C	N	E
---	---	---	---	---

mollicoma N.E. Br.

Woody herb, up to 250 mm tall, long-flowered. Red clumps of glands between leaflets. Leaflets very hairy, with brownish, greyish look. Flowers large. Staminal sheath 10 mm long. Pods short, up to 15 mm long. *Flowers pink or red; October to March*. Bushveld and grassland. *Germishuizen* 3663.

W	S	C	N	E
---	---	---	---	---

nebrowniana J.B. Gillett

(= *I. variabilis* N.E. Br. p.p.)

Wiry, woody, dwarf shrub, up to 400 mm tall. Leaves hairy, 3-foliolate. Inflorescence few-flowered. Calyx short, lobes gland-tipped. Pods patent, slender, 10–17 mm long. *Flowers red; December to April*. Grassland, sandy soil between rocks. *Grobelaar* 2426.

W	S	C	N	E
---	---	---	---	---

obscura N.E. Br.

Herb, up to 300 mm tall, with several stems from woody rootstock, few-flowered. Leaflets narrow, up to 2 mm broad. Pedicels long, 3 mm, peduncle short. Standard with brown hairs on back. *Flowers pink; December to January*. Grassland. *Balsinhas* 2875.

W	S	C	N	E
---	---	---	---	---

ormocarpoides Baker

(= *I. moniliformis* Baker f.,
= *I. torulosa* Baker)

Shrub, up to 3 m high. Leaflets broadly obovate, up to 25 mm long. Standard with brown hairs on back. Pods moniliform, reflexed. Kloofs, sandy soil. *Nel* 7042.

W	S	C	N	E
---	---	---	---	---

oxalidea Welw. ex Baker

(= *I. supralevis* N.E. Br.)

Prostrate perennial herb. Leaflets alternate, terminal one obovate to elliptic, up to 20 × 15 mm, rounded at apex. Pods sickle-shaped, reflexed. *Flowers red; December to February*. Bushveld, stony ridges and disturbed places. *Codd* 871.

W	S	C	N	E
---	---	---	---	---

oxytropis Benth. ex Harv.

Semidecumbent herb, up to 300 mm tall, reddish brown hairy, long-flowered. Red clumps of glands between leaflets. Upper surface of leaflets glabrous. Flowers large. Staminal sheath 10 mm long. *Flowers pinkish mauve; October to March*. Grassland. *Acocks* 11312.

W	S	C	N	E
---	---	---	---	---

placida N.E. Br.

Small shrub, up to 1 m high. Leaflets ± 3 mm broad. Inflorescence twice the length of the leaves. Pedicels long, 3 mm or more. Standard with brown hairs on back. Pods cylindric, patent to erect. *Flowers pink or red; January*. Riverbeds. *Van der Merwe* 121.

W	S	C	N	E
---	---	---	---	---

pongolana N.E. Br.

Prostrate, greyish green perennial herb, long-flowered. Red clumps of glands between leaflets. Leaflets narrowly oblong or lanceolate, 2.5–4.0 mm broad. Staminal sheath 10–12 mm long. Pods short and hairy, not reflexed. *Flowers carmine red; November to January.* Bushveld. Meeuse & Strey 10431.

W	S	C	N	E
---	---	---	---	---

pseudo-indigofera (Merxm.) J.B. Gillett

(= *Microcharis galpinii* N.E. Br.)

Slender, erect, much-branched herb, up to 300 mm tall. Leaves usually with single leaflets. Pod at an angle to pedicel, up to 15 mm long. *Flowers red or pale pink; January to April.* Grassland, rocky hillsides. *Germishuizen 3900.*

W	S	C	N	E
---	---	---	---	---

reducta N.E. Br.

Dwarf shrub, up to 300 mm tall. Red clumps of glands between leaflets. Leaflets broadly obovate, short, 3–4 mm long. Pods short, 6–7 mm long, hairy. *Flowers red; January.* Grassland, dark brown clay-loam soil. *Strey & Schlieben 8491.*

W	S	C	N	E
---	---	---	---	---

rehmannii Baker f.

Small shrub, up to 1 m high, densely hairy. Red clumps of glands between leaflets. Long-flowered with groups of inflorescences at terminal ends of branches. *Flowers scarlet red; January to February.* Vleis, ravines and open veld. *Bruce & Kies 89.*

W	S	C	N	E
---	---	---	---	---

rhytidocarpa Benth. ex Harv. subsp. **rhytidocarpa**

Decumbent herb, up to 300 mm tall. Leaves 3-foliolate with terminal leaflet narrowly ovate and up to 40 mm long. Pods flat, reflexed, broad, brown, curving upwards, venation obvious. *Flowers orange or pink; December to April.* Bushveld and lowveld, disturbed places. *Scheepers 1479.*

W	S	C	N	E
---	---	---	---	---

ripae N.E. Br.

Herb with stems erect, up to 0.6 m high. Stems adpressed-pubescent. Leaves 10–35 mm long, drying greenish or pallid; leaflets 9–11, the lateral opposite in 4–8 pairs. Flowers lax. Corolla 10 mm long. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

rostrata Bolus

Dwarf shrub, up to 450 mm tall. Leaflets narrow, 2–3 mm broad. Long-flowered, flowers usually at ends of branches. Standard with brown hairs on back. Staminal sheath 12–15 mm long. *Flowers deep pink; November to January.* Rocky slopes. *Galpin 9835.*

W	S	C	N	E
---	---	---	---	---

sanguinea N.E. Br.

Semi-erect herb, up to 300 mm tall. Red clumps of glands between leaflets. Long-flowered. Staminal sheath 7–10 mm long. Calyx and pod with black hairs. Pods short, 18 mm long. *Flowers red; April to December.* Grassland. *Marsh 116.*

W	S	C	N	E
---	---	---	---	---

schimperi Jaub. & Spach var. **schimperi**

(= *I. tettensis* Klotzsch)

Small shrub, up to 1 m high. Leaflets alternate, terminal leaflet blade up to 25 mm long. Pods reflexed, up to 20 mm long, kinked at base. *Flowers pink; November to May.* Grassland. *Van Wyk 5187.*

W	S	C	N	E
---	---	---	---	---

schimperi Jaub. & Spach var. **bankiana** (Vatke) J.B.

Gillett

Erect herb, up to 1.3 m high. Stem with straight, closely appressed hairs. Stamens 7–10 mm long. Fruits usually bent sharply at base so that they stand away from stem. *Flowers yellow.* Grassland. *Rogers 20051.*

W	S	C	N	E
---	---	---	---	---

schinzii N.E. Br.

Herb, up to 300 mm tall. Flowering branchlets brown or brownish green. Terminal leaflet obovate, up to 13 mm long. Inflorescence twice as long as leaves. Standard with brown hairs on back. Staminal sheath shorter than 6 mm. *Flowers red; December to March.* Grassland and woodland. *Grobbelaar 453.*

W	S	C	N	E
---	---	---	---	---

sessilifolia DC.

(= *I. falcata* E. Mey.,

= *I. patens* Eckl. & Zeyh.)

Dwarf shrub, up to 300 mm tall. Axis of inflorescence ± spinescent, usually longer than 20 mm in fruit. Pods flat, falcate. Seeds can often be seen bulging. *Flowers red.* Grassland. *Theron 500.*

W	S	C	N	E
---	---	---	---	---

setiflora Baker

(= *I. accepta* N.E. Br.)

Erect herb, up to 1 m high, with several stems from base, not branching. Red clumps of glands between leaflets. Long-flowered, pedicels very short. Pods short, ± 10 mm long. *Flowers pink or red; October to February.* Grassland. *Codd 8333.*

W	S	C	N	E
---	---	---	---	---

sordida Benth. ex Harv.

Herb, up to 450 mm tall, glandular hairy. Leaflets usually broadly obovate, folded, ± 10 mm long. Staminal sheath ± 10 mm long. Pods cylindrical, up to 30 mm long, erect. *Flowers pink; October to January.* Grassland, sandy soil. *Codd 8024.*

W	S	C	N	E
---	---	---	---	---

spicata Forssk.(= *I. bolusii* N.E. Br.)

Small shrub, up to 1 m high. Leaflets usually more than 5, rarely glabrous above, oblong. Pods straight or sometimes slightly curved downwards, densely arranged. *Flowers red; October to April.* Grassland. *Van der Schijff 4318.*

W S C N E

subcorymbosa Baker var. **eylesii** Baker f.

Shrub or small tree, up to 3,5 m high. Terminal leaflet obovate, up to 15 mm long. Inflorescence with short peduncles. Standard with brown hairs on back. Pods straight. *Flowers red; December.* Wooded mountainsides. *Hardy 406.*

W S C N E

swaziensis Bolus var. **swaziensis**

Small shrub, up to 1,2 m high. Stems with rusty hairs. Leaflets broad. Standard with brown hairs on back. Staminal sheath 4–5 mm long. Pods reflexed, cylindrical. *Flowers red; December to January.* Grassland, shrubland and plantations. *Germishuizen 3842.*

W S C N E

swaziensis Bolus var. **perplexa** (N.E. Br.) J.B. Gillett(= *I. perplexa* N.E. Br.)

Shrub, up to 1,5 m high. Stems with rusty hairs. Leaflets broad. Standard with brown hairs on back. Staminal sheath 3,0–3,5 mm long. Pods straight, cylindrical. *Flowers red; January to March.* Grassland and margins of riverine forests. *Codd 6925.*

W S C N E

tinctoria L. var. **arcuata** J.B. Gillett

Herb, up to 0,6 m high. Leaflets up to 6 mm broad. Standard with brown hairs on back. Pods sickle-shaped, with straight margins. *Flowers rosy red; February.* Grassland, disturbed places. *Oakes & Scheepers 349.*

W S C N E

torulosa E. Mey. var. **torulosa**

Herb, up to 300 mm tall. Leaflets oblong to elliptic-oblong. Fruiting-racemes 20–60 mm long, longer than leaves. Pods flattened, curved upwards, mostly 3- or 4-seeded. *Flowers red; November to March.* Open, mixed thornveld. *Van der Meulen 1003.*

W S C N E

torulosa E. Mey. var. **angustiloba** (Baker f.) J.B. Gillett(= *I. angustiloba* Baker f.)

Herb, up to 300 mm tall. Leaflets narrowly obovate. Pods 10–12 mm long, flattened, curved upwards, mostly 3- or 4-seeded. *Flowers light pink to brick-red; October to February.* Grassland. *Louw 1664.*

W S C N E

tristoides N.E. Br.

Shrub, up to 2 m high. Leaflets 4–5 times longer than broad. Pedicels 6–7 mm long. Standard with brown hairs on back. Staminal sheaths 10 mm long. Pods long, 40–45 mm. *Flowers red or rose-pink to carmine-red; January to March.* Forest fringes and grassland. *Brent 24.*

W S C N E

trita L.f. subsp. **scabra** (Roth) De Kort & Thijsse

Shrub, up to 500 mm tall. Leaves with more than 3 broad leaflets. Pods straight or slightly curved, reflexed, subtetragonous. *Flowers mauve; December to May.* Open grassland. *Van Dam sub TRV 21139.*

W S C N E

trita L.f. subsp. **subulata** (Vahl ex Poir.) Ali(= *I. subincana* N.E. Br.)

Shrub; up to 1 m high. Leaves 3-foliate; leaflets broad. Pods straight or slightly curved, reflexed, subtetragonous. *Flowers red or pink; October to February.* Bushveld and woodland. *Brenan 14142.*

W S C N E

velutina E. Mey.

Herb, up to 300 mm tall. Red clumps of glands between leaflets. Leaf surfaces greyish hairy. Flowers large. Staminal sheath $\pm$ 10 mm long. *Flowers red or salmon-pink; September to January.* Grassland. *Leach 11967.*

W S C N E

vicioides Jaub. & Spach var. **vicioides**

Greyish green, decumbent herb, up to 300 mm tall, weedy. Shorter hairs on leaflets never beyond margins. Pods short, patent, with rounded apices, hairy. *Flowers white or pink; December to June.* Disturbed areas, overgrazed grassland and bushveld. *Germishuizen 296.*

W S C N E

vicioides Jaub. & Spach var. **rogersii** (R.E. Fr.) J.B.

Gillett

(= *I. cognata* N.E. Br.,= *I. rogersii* R.E. Fr.)

Decumbent herb, up to 300 mm tall, weedy. Long hairs on undersurface of leaflets, extending beyond margin. Pods short, patent, with rounded apices, hairy. *Flowers white, orange or purple; December to May.* Grassland. *Germishuizen 5156.*

W S C N E

zeyheri Spreng. ex Eckl. & Zeyh.(= *I. acutispala* P. Conrath ex Baker f.)

Dwarf shrub or herb, up to 1 m high. Leaves greyish green, clustered along stems. Inflorescence much longer than leaves. Pedicels 3 mm long or more. Standard with brown hairs on back. Staminal sheath shorter than 6 mm. *Flowers white or pink; October to March.* Grassland, clay soil. *Germishuizen 74.*

W S C N E

Kotschyia Endl. (s. Afr.: 2 spp.) 3796010

Wild. 1964. Kirkia 4: 159.
Verdcourt. 1970. Kew Bull. 24: 17.

parvifolia (Burt Davy) Verdc.
(= *Smithia parvifolia* Burt Davy)

Shrub, up to 1 m high. Branchlets glandular-hispidulous. Leaves usually well under 20 mm long; leaflets 4 or 5 pairs. Flowers solitary, pedicels visible. *Flowers blue; April to September*. Rocky, sandy soil and mountain grassland. *Rauh & Schlieben 9679*.

W S C N E

thymodora (Baker f.) Wild subsp. **thymodora**

Shrub, up to 1 m high. Stem and leaf rhachises with spreading glandular hairs. Flowers in dense strobiliform clusters, usually subsessile, pedicels mostly not visible. *Flowers yellow; February to May*. Grassland and edge of forest. *Codd 7871*.

W S C N E

Lablab Adans. (s. Afr.: 1 sp.) 3909000

Verdcourt. 1970. Kew Bull. 24: 409–411.

purpureus (L.) Sweet subsp. **uncinatus** Verdc.
(= *Dolichos uncinatus* Schweinf.)

Climber. Terminal leaflet deltoid. Pods obliquely oblong-falcate, beaked by style, verrucose along margin. *Flowers mauve; November to May*. Stony grassland, streambanks and roadsides. *Hanekom 2291*.

W S C N E

Lebeckia Thunb. (s. Afr.: 35 spp.) 3660000

Harvey. 1862. F.C. 2: 82–89.

macrantha Harv.

A much-branched spiny shrub, up to 2.5 m high. Leaves reduced to scales. Inflorescence a dense terminal raceme. *Flowers bright yellow; September to December*. Shrub bushveld. *Carr 5*.

W S C N E

Lessertia DC. (s. Afr.: 46 spp.) 3756000

Harvey. 1862. F.C. 2: 213–224.
Bolus. 1915. Ann. Bolus Herb. 1: 87–96.

affinis Burt Davy

Semi-erect, sparsely strigose-pubescent herb. Flowers 5–7 mm long. Pods obliquely oblong, 15 × 5 mm, inflated. *Flowers purple; October to November*. Grassland. *Germishuizen 3953*.

W S C N E

depressa Harv.

Procumbent or prostrate herb. Leaves 3–6-foliolate. Peduncles short, racemose. Pods glabrous, inflated. *Flowers pink; September to February*. Grassland. *Sutton 595*.

W S C N E

mossii R.G.N. Young

Erect or ascending herb. Leaflets 3–5-jugate. Racemes usually with 4 flowers, borne towards ends of peduncles. Style curved, bearded near tip. Pods glabrous, membranous, flattish. *Flowers white and purple; October*. Grassland. *Moss 13554 sub J*.

W S C N E

pauciflora Harv. var. **pauciflora**

Prostrate or erect herb, up to 300 mm tall. Peduncles shorter than leaves. Pods compressed, linear, 3–4 times as long as broad, obtuse, mucronate, straight or somewhat falcate, hispid. *Flowers purple; February*. Grassland. *Acocks 12396*.

W S C N E

perennans (Jacq.) DC. var. **perennans**

Shrub, up to 1 m high, thinly silky with soft, appressed, whitish hairs. Branches long, virgate. Pods obliquely obovate, subcompressed, glabrous. *Flowers mauve-pink or red; January*. Riverbanks. *Galpin 10224*.

W S C N E

perennans (Jacq.) DC. var. **polystachya** (Harv.) L. Bolus
(= *L. polystachya* Harv.)

Shrub, up to 1 m high, densely villous with soft, white, loose hairs. Branches long, virgate. Pods obliquely obovate, subcompressed, glabrous. *Flowering December to January*. Riverbanks. *Nelson sub TRV 11154*.

W S C N E

perennans (Jacq.) DC. var. **sericea** L. Bolus

Erect, silvery hairy shrublet, up to 1.5 m high. Pods obliquely obovate, softly hairy, subcompressed. *Flowers scarlet, mauve or white; December*. *Devenish 359*.

W S C N E

prostrata DC.

(= *Colutea prostrata* Thunb.)

Prostrate, sparingly hispid herb. Leaflets linear-lanceolate. Pods inflated, pubescent. *Flowers purplish pink; November to April*. Grassland. *Acocks 12498*.

W S C N E

stricta L. Bolus

Herb, up to 500 mm tall, rather weak-stemmed, supported by grasses and other herbs. Pods obliquely obovate-oblong, 20–30 mm long, glabrous. *Flowers rose-red; December to March*. Grassland, vleis. *Clarke 1522*.

W S C N E

Lonchocarpus Kunth (s. Afr.: 3 spp.) 3834000

Polhill. 1971. F.T.E.A. 3,1: 65.

bussei Harms

(= *L. fischeri* Harms,
= *L. menyhartii* Schinz)

Slender deciduous tree, up to 15 m high. Leaflets 3–11, subglabrous to appressed pubescent. Panicles terminal

and in axils of fallen or young leaves. Fruit without a continuous wing. *Flowers purple to mauve; October.* Woodland. *Tinley 3060.*

W S C N E

capassa Rolfe

(= *Capassa violacea* Klotzsch)

Evergreen tree, up to 20 m high. Leaflets 3–5 (very rarely 7), densely covered beneath with very short, regular indumentum of crisped hairs. Panicles terminal. Fruit with a continuous 1–3 mm-wide wing. *Flowers pale mauve to purplish; October to November.* Mopane veld, woodland, wooded grassland and riverine forest. *Codd 4447, Edwards 3348.*

W S C N E

Lotononis (DC.) Eckl. & Zeyh.

(s. Afr.: 139 spp.)

3657000

Van Wyk. 1991. *Contr. Bolus Herb.* 14: 92–280.

Van Wyk. 1993. *Pers. comm.*

acuticarpa B.-E. van Wyk

Procumbent annual herb, up to 100 mm tall. Upper surface of leaflets glabrous. Pods oblong, with apex acute and pointing upwards. *Flowers yellow; January to April.* Open grassland, gravelly areas. *Van Wyk 2625 sub JRAU.*

W S C N E

adpressa N.E. Br. subsp. adpressa

(= *L. sericoiflora* Dummer)

Prostrate suffrutex, up to 200 mm tall. Upper surface of leaflets densely hairy. *Flowers 9–10 mm long, yellow; October to April.* Grassland, usually disturbed places. *Leendertz sub TRV 7827.*

W S C N E

adpressa N.E. Br. subsp. leptantha B.-E. van Wyk

Procumbent suffrutex, up to 200 mm tall. Upper surface of leaflets densely hairy. *Flowers shorter than 7 mm, yellow; February to May.* Open grassland. *Repton 3040.*

W S C N E

amajubica (Burt Davy) B.-E. van Wyk

(= *Buchenroedera amajubica* Burt Davy)

Virgate suffrutex, with erect flowering branches from woody base. Leaves pubescent. Pods small, ovate. *Flowers with wing and keel petals much shorter than standard petal, blue; November to January.* Grassland. *Du Toit 44.*

W S C N E

arida Dummer

Mat-forming herb. Twigs densely silky sericeous when young. Leaves silver; leaflets narrowly oblanceolate. Keel densely hairy. Pods as long as or only slightly longer than calyx. *Flowers bright yellow; April to May.* Growing between rock plates. *Germishuizen 197.*

W S C N E

burchellii Benth.

Prostrate perennial herb, up to 150 mm tall. Bracts large and foliaceous. Pods small, ovoid, almost hidden by calyx. *Flowers congested into dense heads, yellow; August to February.* Open grassland. *Carter 900.*

W S C N E

calycina (E. Mey.) Benth.

(= *L. calycina* (E. Mey.) Benth. var. *acuta* Dummer,

= *L. calycina* (E. Mey.) Benth. var. *hirsutissima* Dummer)

Small, prostrate annual herb, up to 100 mm tall (usually much less). Upper surface of leaflets glabrous. Calyx nearly as long as or longer than corolla. Pods very short, with apex obtuse. *Flowers yellow; September to May.* Open grassland, often disturbed areas. *Kaplan 25466.*

W S C N E

carinata (E. Mey.) Benth.

(= *L. florifera* Dummer,

= *L. pauciflora* Dummer)

Much-branched, rounded suffrutex, up to 500 mm tall. Leaflets and twigs with short appressed hairs. Stipules paired at each node. Petals densely hairy all over. *Flowers yellow; October to June.* Grassland, usually in rocky areas. *Codd & De Winter 3273.*

W S C N E

corymbosa (E. Mey.) Benth.

(= *L. eriantha* Benth. var. *obovata* Scott Elliot)

Erect, suffrutescent herb, with annual shoots from woody rootstock, up to 400 mm tall. Leaflets obovate. Standard petal hairy, usually 2–3 mm wide. *Flowers usually more than 8 per inflorescence, yellow (not turning black); August to February.* Grassland. *Devenish 2051.*

W S C N E

crumanina Burch. ex Benth.

Prostrate or procumbent perennial herb, up to 100 mm high. Stipules single at each node. Petals scarcely longer than calyx. Pods short, ovoid. *Flowers 3 or 4 per flowering node, in subsessile fascicles; yellow, fading orange; all year round, mainly December and January.* Limestone or lime-rich soils. *Acocks 18786.*

W S C N E

curtii Harms

(= *Amphinomia curtii* (Harms) A. Schreib.)

Annual or short-lived perennial herb, up to 250 mm tall. Leaflets densely silky on upper surface. Calyx much shorter than corolla. Pods oblong, inflated, with apex obtuse. *Flowers yellow; September to May.* Open grassland. *Rogers 20796.*

W S C N E

decumbens (Thunb.) B.-E. van Wyk subsp. rehmannii

(Dummer) B.-E. van Wyk

(= *L. rehmannii* Dummer)

Prostrate, suffrutescent herb, up to 100 mm tall. Leaflets broadly obovate. Lateral sinuses of calyx very shallow. Tips of keel petals purple. *Flowers yellow*

(apex of keel purple); December to May. Open grassland, at high altitudes. *Venter 9722 sub JRAU.*

W S C N E

difformis B.-E. van Wyk

Probably suffrutescent, up to 300 mm tall. Bracts broadly ovate, widely spaced along peduncle. Bracteoles present. Stipules foliaceous. *Flowers yellow; January to March.* Probably open grassland. *Sidey 1609.*

W S C N E

eriantha Benth.

Erect, suffrutescent herb with annual shoots from woody rootstock, up to 200 mm tall. Flowering twigs unbranched. Leaflets oblanceolate to elliptic. Stipules similar to leaflets in size. Standard petal hairy. *Flowers 8 or less per inflorescence, yellow (not turning black); August to February.* Grassland. *Burke 363.*

W S C N E

foliosa Bolus

Erect, suffrutescent herb, with annual shoots from woody rootstock, up to 200 mm tall. Leaves and flowers turning black when dried. Flowering branches shorter than 200 mm. Standard petal $\pm$ glabrous, wider than 3 mm. *Flowers yellow; July to March.* Grassland, often rocky or gravelly areas. *Galpin 1377.*

W S C N E

galpinii Dummer

(= *Buchenroedera sparsiflora* Wood & Evans,
= *L. galpinii* Dummer var. *prostrata* Dummer)

Prostrate shrub, up to 500 mm tall. Leaves densely silky. Stipules single at each node. *Flowers blue; November to April.* Open grassland, rocky areas at high altitudes. *Hilliard 2262 sub NH.*

W S C N E

lanceolata (E. Mey.) Benth.

Erect, suffrutescent herb, with annual shoots from woody rootstock, up to 400 mm tall. Leaves and flowers turning black when dried. Flowering branches longer than 300 mm. Standard and keel petals $\pm$ glabrous, standard petal narrower than 3 mm. *Flowers yellow; October to February.* Grassland. *Leendertz 2866.*

W S C N E

laxa Eckl. & Zeyh.

Prostrate perennial herb with annual branches from woody base, up to 400 mm tall. Basal leaves usually unifoliate, especially in resprouting specimens; leaflets small, narrower than 10 mm. Keel petals acute. Pods oblong. *Flowers shorter than 9 mm, yellow; January to December.* Open grassland, often disturbed areas. *Smith 1558.*

W S C N E

listii Polhill

Prostrate, suffrutescent herb, up to 1 m wide. Lateral calyx lobes obtuse. Pods usually folded like a con-

tin. *Flowers relatively small, 7–10 mm long, yellow; June to January.* Seasonally wet areas, disturbed places. *Mogg 11503.*

W S C N E

macrosepala P. Conrath

Perennial pyrophyte with annual branches from woody rootstock, up to 500 mm tall. Basal leaves usually unifoliate; leaflets large (usually wider than 10 mm). Keel petals acute. Pods oblong. *Flowers longer than 9 mm, white (or partly yellow); September to February.* Open grassland. *Bredenkamp 211.*

W S C N E

marlothii Engl.

Prostrate, herbaceous perennial, up to 250 mm tall. Calyx lobes long and narrow. Pods very small, slightly sickle-shaped. *Flowers small, up to 8 mm long, yellow with prominent veins on standard petal; January to October.* Seasonally wet areas in very dry habitats. *Nelson 197.*

W S C N E

mucronata P. Conrath

Prostrate, suffrutescent herb, forming dense mats, up to $\pm$ 50 mm tall. Leaflets very small, mucronate. Stipules single at each node. Calyx often reddish. Pods broadly oblong, glabrescent. *Flowers yellow; September to March.* Grassland, often rocky or sandy areas. *Galpin 1497.*

W S C N E

pariflora N.E. Br.

Prostrate, suffrutescent herb, up to 100 mm tall. Leaflets obtuse. Calyx with 4 upper lobes much expanded, several times wider than lower lobe. Petals hairy. *Flowers yellow; November to January.* Grassland. *Junod 4374.*

W S C N E

platycarpa (Viv.) Pic. Serm.

(= *L. clandestina* (E. Mey.) Benth.,
= *L. steingroeveriana* (Schinz) Dummer)

Prostrate or procumbent annual herb, up to 200 mm tall. Leaves of flowering twigs opposite. Stipules small, less than 5×3 mm. *Flowers yellow; August to May.* Open grassland, often disturbed areas. *Clarke 187.*

W S C N E

pottiae Burtt Davy

Virgate suffrutex, with erect flowering branches from woody base, up to 0.8 m high. Leaves nearly glabrous; leaflets straight, not recurved. Pods linear. *Flowers blue; October to January.* Grassland. *Pott 5071.*

W S C N E

procumbens Bolus

Prostrate shrub, with annual shoots from woody base, up to 200 mm tall. Bracts broadly ovate. Paired bracteoles present. Flowers and bracts congested at apex of

peduncle. Stipules much smaller than leaflets. *Flowers yellow; November to January*. Open grassland, often rocky areas. *Acocks 23822*.

W S C N E

pulchra Dummer

(= *L. tenuipes* Burtt Davy)

Erect, suffrutescent herb, with annual shoots from woody rootstock, up to 400 mm tall. Leaves and flowers not turning black with age. Standard petal glabrous or with line of hairs along middle. *Flowers yellow; August to March*. Grassland. *Stirton 1704*.

W S C N E

solitudinis Dummer

Prostrate, suffrutescent herb, often rooting at nodes, up to 100 mm tall. Leaflets broad. Peduncles slender, with large (10–14 mm long) flowers. Pods ovate. *Flowers yellow; June to December*. Seasonally wet areas (poorly known). *Repton 449*.

W S C N E

stipulosa Baker f.

(= *Amphinomia stipulosa* (Baker f.) A. Schreib.)

Prostrate or procumbent annual herb, up to 200 mm tall. Leaves of flowering twigs opposite. Stipules large and foliaceous, more than 5 × 3 mm. *Flowers yellow; November to May*. Open grassland. *Gertenbach 5462*.

W S C N E

subulata B.-E. van Wyk

Prostrate, suffrutescent herb, often rooting at nodes, up to 100 mm tall. Calyx lobes long and narrow. Pods folded like a concertina as in *L. listii*, but distinctly hairy all over. *Flowers yellow; September to March*. Disturbed riverbanks. *Louw 1691*.

W S C N E

wilmsii Dummer

(= *L. hirsuta* Schinz)

Erect, sparsely branched suffrutex, up to 400 mm tall. Stipules paired at each node. Leaflets and twigs with sparse, erect hairs. Petals hairy all over. *Flowers yellow, becoming reddish with age; October to May*. Open grassland. *Louw 1264*.

W S C N E

Lotus L. (s. Afr.: 5 spp.)

3698000

Gillet. 1958. Kew Bull. 13: 361.

Gillet. 1971. F.T.E.A. 4: 1042–1048.

discolor E. Mey. subsp. **discolor**

(= *L. ligrensis* Baker)

Herb, up to 400 mm tall, with clusters of erect stems. Leaves appressed hairy; leaflets 15–20 × 4–5 mm. Flowers in axillary umbels. Peduncles 60–130 mm long. Pods linear, straight, 15–30 mm long. *Flowers white; September to February*. Grassland. *Codd 3190*.

W S C N E

mossamedensis Welw.

Much-branched herb, up to 300 mm tall. Terminal leaflet obovate-cuneate, truncately rounded, 25 × 15 mm. Peduncles up to 40 mm. Flowers in axillary umbels. *Flowers pink to purplish; December*. Mopani veld. *Rogers sub TRV 18557*.

W S C N E

Macrotyloma (Wight & Arn.) Verdc.

(s. Afr.: 6 spp.)

3910020

Verdcourt. 1970. Kew Bull. 24.3: 400–406.

Verdcourt. 1971. F.T.E.A. 4: 581–584.

Verdcourt. 1982. Hooker's Icon. Pl. 38.4: 1–138.

axillare (E. Mey.) Verdc. var. **axillare**

(= *Dolichos axillaris* E. Mey.)

Climbing or trailing perennial herb. Stems up to 3.5 m long, with dense, rarely sparse, spreading hairs. Flowers 12–15 mm long. Lower and lateral sepals acuminate, not filiform-pointed. Pods with beak 3–7 mm long, pubescent. *Flowers pale yellow; September to June*. Savanna. *Germishuizen 1348*.

W S C N E

axillare (E. Mey.) Verdc. var. **glabrum** (E. Mey.) Verdc.

(= *Dolichos axillaris* E. Mey. var. *glaber* E. Mey.)

Creepers. Stems with sparse, rarely dense, adpressed hairs. Flowers 13–30 mm long. Calyx 4–7 mm long. Pods with beak 5–15 mm long, pubescent or glabrescent. *Flowers pale yellow; March*. Grassland, bushveld and open forest. *Stirton 1730*.

W S C N E

maranguense (Taub.) Verdc.

(= *Dolichos taubertii* Baker f.,

= *Glycine maranguensis* Taub.)

Prostrate or climbing perennial herb, with stems up to 2.4 m long. Leaflets elliptic, 18–80 × 6–45 mm, margin with characteristic short, close, white pubescence. Stipules 4–8 mm long. Geocarpic fruits single-seeded. *Flowers yellow; December to March*. Woodland, grassy spaces. *Stalmans 1077*.

W S C N E

uniflorum (Lam.) Verdc. var. **stenocarpum** (Brenan)

Verdc.

Climbing perennial or annual herb, up to 0.6 m long. Indumentum of stem ± spreading. Foliage and pods hairy. Leaflets pubescent. Legumes 4.0–5.5 mm wide, stipitate with smooth yellow margins. *Flowering April*. Bushveld. *Rogers 23966*.

W S C N E

Medicago L. (s. Afr.: 7 spp.)

3688000

Stirton. 1982. Bothalia 14: 27–35.

laciniata (L.) Mill.

(= *M. aschersoniana* Urb.,
= *M. polymorpha* L. var. *laciniata* L.)

Spreading annual herb, with stems up to 350 mm long. Central leaflets 4–6 mm wide. Stipules lacinate or incised. Calyx teeth shorter than tube. Wing petals shorter than keel. Burrs spiny, without partitions between seeds. *Flowers yellow; August to November*. Dry dams, salt pans and cultivated land. *Turner 1114*.

W S C N E

lupulina L.

Prostrate annual or short-lived perennial herb. Margin of leaf slightly toothed in upper part. Stipules entire or irregularly toothed. Flowers 10–30, peduncle more than twice the length of petiole of subtending leaf. Burrs smooth, single-seeded, black with only distant end coiled. *Flowers light yellow; September to December*. Grassland and weed in lawns, usually moist conditions. *Ubbink 476*.

W S C N E

polymorpha L.

(= *M. denticulata* Willd.,
= *M. hispida* Gaertn.)

Procumbent annual herb. Central leaflets 7–15 mm wide. Stipules lacinate. Flowers 1–10, peduncle less than twice the length of petiole of subtending leaf. Burrs spiny, with partitions between seeds. *Flowers yellow; August to October*. Cultivated land. *Mogg 16855*.

W S C N E

sativa L. subsp. **sativa***

Perennial herb, up to 300 mm tall. Margin of leaf serrate in upper part. Stipules entire or irregularly toothed. Burrs smooth, many-seeded, brown, coiled along the full length. *Flowers purple; October to April*. Grassland and riverbanks. Native to Europe and Asia. *Germishuizen 1256*.

W S C N E

Melilotus Mill. (s. Afr.: 3 spp.) 3689000

Henderson & Anderson. 1966. Common weeds in South Africa: 182–183.
Gillett. 1971. F.T.E.A. 4: 1039–1041.

alba Desr.*

Much-branched annual herb, up to 1,5 m high. Rhachis of larger leaves, excluding terminal petiolule, often prolonged more than 4 mm beyond lateral leaflets. Style 1,7–2,3 mm long. Pods with weak irregular network of veins, 3 mm long. *Flowers white; October to April*. Grassland, riverbanks and vleis. Native to Europe and Asia. *Germishuizen 4314*.

W S C N E

indica (L.) All.*

(= *M. parviflora* Desf.,
= *Trifolium melilotus-indica* L.)

Much-branched herb, up to 1,5 m high. Style 0,9–1,2 mm long. Pods with prominent, irregular network of

veins, 2–3 mm long. *Flowers yellow; August to November*. Disturbed areas. Native to Europe and Asia. *Hanekom 2326*.

W S C N E

Melolobium Eckl. & Zeyh. (s. Afr.:

20 spp.)

3665000

Harvey. 1862. F.C. 2: 78–81.

alpinum Eckl. & Zeyh.

Shrublet, up to 0,3 m tall. Branches curved, simple, ending in inflorescence. Leaflets linear-cuneate, much narrower than long. *Flowers bright yellow; November to December*. Grassland. *Schlechter sub TRV 2304*.

W S C N E

calycinum Benth.

Spiny shrublet, up to 0,5 m high. Divaricately branched. Leaflets linear-cuneate, folded together. Bracts longer than calyx tube. Calyx equalling corolla. Pods slightly curved, villous. *Flowers yellow; July to September*. Grassland. *Van Wyk 550*.

W S C N E

candicans (E. Mey.) Eckl. & Zeyh.

(= *Dichilus candicans* E. Mey.)

Woody dwarf shrub, up to 350 mm tall. Twigs canescent. Bracts short. Calyx shorter than corolla. Viscidulous, but scarcely glandular. Pods submoniliform, nearly straight, pointed. *Flowers yellow; May*. Grassland. *Sutton 1200*.

W S C N E

canescens Benth.

Dwarf shrub, up to 300 mm tall, divaricately much-branched, armed with spines. Twigs velvety canescent. Leaflets glabrescent. Pods falcate-curved, silky canescent. *Flowers yellow; September to May*. Grassland. *Story 4573*.

W S C N E

microphyllum (L.f.) Eckl. & Zeyh.

(= *Dichilus microphyllus* E. Mey.)

Spiny shrublet, up to 450 mm tall, glandular, scabrous and pubescent. Divaricately much-branched. Bracts short. Calyx shorter than corolla. *Flowers yellow; July to September*. Grassland. *Hamilton sub TRV 8191*.

W S C N E

obcordatum Harv.

Shrublet, up to 300 mm tall. Leaflets oblong-obcordate, sharply emarginate, glandular and pubescent. Branches curved. *Flowers numerous in a longish-spiked raceme, yellow; December to January*. Grassland and stream-banks. *Bredenkamp 437*.

W S C N E

subspicatum P. Conrath

Erect shrublet, up to 400 mm tall. Stem, rhachis, pedicel and pod minutely sericeous. Terminal leaflets linear to

oblong-linear, 15–30 × 2,0–2,5 mm, Pods 20 × 3 mm, straight, torulose. *Flowers yellow and purple; October to February*. Grassland. Mogg 22819.

W S C N E

wilmsii Harms

Erect, many-stemmed shrublet, up to 500 mm tall. Stem and rhachis glabrous or thinly pilose with spreading hairs. Stipules foliaceous, 5–8 mm long, falcate. Leaflets linear, acute. *Flowers yellow; November to February*. Grassland. Acocks 20855.

W S C N E

Mucuna Adans. (s. Afr.: 2 spp.) 3877000

Wilmot-Dear. 1984. Kew Bull. 39,1: 23.
Franklin Hennessy. 1991. Bothalia 21: 17–25.

coriacea Baker subsp. *irritans* (Burt Davy) Verdc. (= *M. irritans* Burt Davy)

Climber. Leaflets mostly densely, velvety hairy, apex obtuse; terminal leaflet elliptic, apex mucronulate. Pods oblong, curved, densely covered with yellowish brown, irritant bristles. Aril black. *Flowers brownish purple; March to April*. Grassland. Galpin 9647.

W S C N E

pruriens (L.) DC. var. *utilis* (Wall. ex Wight) Baker ex Burck

Climber. Leaflets thin, pilose, apex acute; terminal leaflet rhomboid, laterals very oblique. Pods oblong, 40–90 × 10–15 mm, covered with irritant bristly hairs. Aril white. *Flowers blackish purple; April*. Lowveld bush along watercourse. Codd 6545.

W S C N E

Mundulea (DC.) Benth. (s. Afr.: 1 sp.) 3719000

Gillett. 1971. F.T.E.A. 3,1: 155–157.
Coates Palgrave. 1977. Trees of southern Africa: 309.

sericea (Willd.) A. Chev. (= *Cytisus sericeus* Willd., = *Mundulea suberosa* (DC.) Benth.)

Shrub or small tree, up to 3 m high. Leaf rhachis and petiolules velvety; leaflets opposite in ± 6 pairs, ovate-oblong to elliptic, 40 × 15 mm, rounded at apex, appressed pubescent. Flowers in pairs at each node of dense terminal velvety pseudoracemes. *Flowers bluish purple; September to January*. Wooded grassland and bushveld. Fourie 2332.

W S C N E

Neonotonia Lackey (s. Afr.: 1 sp.) 3864010

Lackey. 1977. Phytologia 37,3: 210.

wightii (Arn.) Lackey

(= *Glycine wightii* (Arn.) Verdc. subsp. *wightii* var. *longicauda* (Schweinf.) Verdc.)

Twiner or perennial climber. Stems glabrescent to densely velvety hairy. Leaflets ovate; terminal leaflet articulated at base. Flowers 4,5–5,0 mm long. Pods linear-oblong, densely hairy with ferruginous hairs, 20 × 5 mm. *Flowers white or mauve-blue; December to April*. Forest, grassland and disturbed open bush. Retief 589.

W S C N E

Neorautanenia Schinz (s. Afr.: 2 spp.) 3865000

Verdcourt. 1970. Kew Bull. 24: 300–306.

amboensis Schinz

(= *N. lugardii* C.A. Sm.,
= *N. edulis* C.A. Sm.)

Herbaceous shrub, up to 1 m high. Terminal leaflet rhomboid, margin entire. Standard suborbicular, up to 8,5 mm long and 10 mm wide. Pods oblong, up to 60 mm long and 10 mm wide, pubescent. *Flowers mauve; November to March*. Bushveld and grassland. Acocks 16780.

W S C N E

ficifolius (Benth.) C.A. Sm.

(= *Pueraria ficifolia* (Benth.) L. Bolus,
= *Rhynchosia ficifolia* Benth.)

Hairy, prostrate or trailing herb. Leaflets deeply 3-lobed, apices acute, mucronulate. Racemes compactly few(6–20)-flowered. Pods oblong, 50 × 10 mm, velvety pubescent. *Flowers purple; November to January*. Grassland. Smith 1103.

W S C N E

Ophrestia H.M.L. Forbes (s. Afr.: 1 sp.)

3718020

Forbes. 1948. Bothalia 4: 1003.
Verdcourt. 1970. Kew Bull. 24: 257.

oblongifolia (E. Mey.) H.M.L. Forbes var. *oblongifolia*

(= *O. retusa* H.M.L. Forbes,
= *Tephrosia oblongifolia* E. Mey.)

Prostrate herb. Stems very long, trailing, either appressedly or patently pubescent, pale or fulvous. Leaves imparipinnate; leaflets elliptic-oblong, prominently veined beneath. Calyx densely hirsute. *Flowering October to March*. Grassland. Theron 1131.

W S C N E

Ormocarpum P. Beauv. (s. Afr.: 2 spp.)

3792000

Gillett. 1971. F.T.E.A. 3,1: 352–364.

kirkii S. Moore(= *O. mimosoides* S. Moore)

Shrub or small tree, up to 9 m high. Leaflets 7–12 × 4–7 mm, margins revolute. Corolla persistent. Fruit pubescent, coiled, hidden among petals. *Flowers purple; January to March*. Bushveld and forest margins. *Coetzer 156*.

W S C N E

trichocarpum (Taub.) Engl.(= *Diphaca trichocarpa* Taub.,
= *O. setosum* Burt Davy)

Virgate shrub, up to 5 m high. Corolla caducous. Fruit straight or nearly so, up to 50 mm long; tubercled-based bristles on fruit numerous, yellow, up to 6 mm long. *Flowers violet, dark-veined; November to April*. Savanna and lowveld. *Strey & Schlieben 8586*.

W S C N E

Otholobium C.H. Stirt. (s. Afr.:

41 spp.)

3703040

Stirton. 1981. *Advances in legume systematics*: 341.**polystictum** (Benth. ex Harv.) C.H. Stirt.(= *Psoralea polysticta* Benth. ex Harv.)

Shrub, up to 1 m high. Leaves 3-foliate, subsessile or very shortly petiolate; leaflets narrowly obovate, cuneate black-dotted, recurved-mucronate, glabrescent. Flowers axillary in clusters, peduncles 2–4 mm long. *Flowers pink; July to June*. Grassland and edge of forest. *Repton 5353*.

W S C N E

wilmsii (Harms) C.H. Stirt.(= *Psoralea wilmsii* Harms)

Shrub, up to 3 m high. Leaves 3-foliate, petiolate, petioles up to 4 mm long; leaflets oblanceolate to oblanceolate-ovate, recurved mucronate, black-dotted. Inflorescence terminal and axillary, spicate. Peduncles up to 30 mm long. *Flowers white and purple or purplish blue*. Grassland. *Germishuizen 5219*.

W S C N E

Otoptera DC. (s. Afr.: 1 sp.)

3906000

Schreiber. 1970. *F.S.W.A.* 60: 93.**burchellii** DC.(= *Vigna burchellii* (DC.) Harv.)

Suberect, semiwoody shrublet with stems up to 1 m long. Leaflets narrowly ovate, mucronate. Flowers paired at top of axillary peduncles. Calyx with broadly campanulate tube, 2 lobes fused. Pods linear. *Flowers pink or purplish blue; October to March*. Bushveld and grassland. *Mogg 37245*.

W S C N E

Pearsonia Dummer (s. Afr.: 7 spp.) 3657010Polhill. 1974. *Kew Bull.* 29: 383–410.**aristata** (Schinz) Dummer(= *Lotononis aristata* Schinz)

Many-stemmed herb, up to 1.5 m high. Leaflets narrowed to pungent tip, usually narrowly oblanceolate-elliptic, 8–28 × 2–6 mm. *Flowers bright yellow; October to April*. Grassland. *Scheepers 1057*.

W S C N E

bracteata (Benth.) Polhill(= *Lotononis bracteata* Benth.)

Many-stemmed perennial herb, up to 450 mm tall. Bracts elliptic-obovate or elliptic-oblong. Flowers solitary on wiry leaf-opposed peduncles, 8–18 mm long. Standard 10–14 mm long. *Flowers yellow; December to March*. Grassland, roadsides. *Van der Schijff 5314*.

W S C N E

cajanifolia (Harv.) Polhill subsp. **cajanifolia**(= *Pleiospora cajanifolia* Harv.,
= *Pleiospora gracilior* Dummer)

Erect herb, up to 1.5 m high. Undersurface of leaflets sparsely covered by stiff hairs between which the surface is clearly visible. Inflorescence a short raceme. Calyx 6–8 mm long. *Flowers yellow; November to March*. Bushveld and grassland. *Acoks 20894*.

W S C N E

cajanifolia (Harv.) Polhill subsp. **cryptantha** (Baker)

Polhill

(= *Eriosema cryptantha* Baker)

Erect herb with several stems, up to 1.5 m high. Leaves 3-foliate; undersurface of leaflets hidden by dense, silky indumentum. Inflorescence a dense raceme. Calyx 8–10 mm long. *Flowers yellow; October to April*. Grassland and woodland. *Vahrmeijer 2459*.

W S C N E

grandifolia (Bolos) Polhill subsp. **latibracteolata**

(Dummer) Polhill

(= *Phaenohoffmannia latibracteolata* (Dummer) J.B. Gillett,
= *Pleiospora latibracteolata* Dummer)

Prostrate herb. Stipules usually broadly ovate-acuminate. Inflorescences subdense to lax pedunculate racemes, 50–150 mm long. Pedicels 2–4(–6) mm long. Calyx 14–18 mm long. *Flowers purple; November to March*. Rocky grassland. *Onderstall 1324*.

W S C N E

obovata (Schinz) Polhill(= *Phaenohoffmannia obovata* (Schinz) J.B. Gillett,
= *Pleiospora obovata* Schinz)

Prostrate herb, usually covered with long spreading hairs. Leaflets elliptic-obovate to obovate. Stipules linear or linear-lanceolate. Standard 13–20 mm long. *Flowers yellow; September to March*. Grassland. *Mohle 207*.

W S C N E

sessilifolia (Harv.) Dummer subsp. **sessilifolia**(= *Lotononis sessilifolia* Harv.,
= *P. mucronata* Burt Davy ex Baker f.)

Slender-stemmed shrublet, up to 500 mm tall. Bracteoles linear, 3.5–5.0 mm long. Petioles 0–2 mm. *Flow-*

ers in heads or short, spiciform racemes, yellow; August to March. Grassland, vleis. Codd & De Winter 3276.

W S C N E

sessilifolia (Harv.) Dummer subsp. **filifolia** (Bolus) Polhill

(= *Lotononis filifolia* Bolus,
= *Lotononis rogersii* Kentsit)

Suffrutex, up to 0,6 m high. Leaflets 5–10(–40) times as long as broad, usually with surface visible between hairs at least on older leaflets. *Flowers yellow; August to December. Grassland. Germishuizen 3314.*

W S C N E

sessilifolia (Harv.) Dummer subsp. **marginata** (Schinz) Polhill

(= *Lotononis marginata* Schinz)

Slender-stemmed shrublet, up to 1,2 m high, habit very varied. Bracteoles linear, 0,5–3,0 mm long. Leaflets less than 5 times as long as broad, then densely tomentose. *Flowers yellow; January to December. Grassland, woodland, rocky outcrops. Germishuizen 1134.*

W S C N E

sessilifolia (Harv.) Dummer subsp. **swaziensis** (Bolus) Polhill

(= *Lotononis swaziensis* Bolus,
= *P. swaziensis* (Bolus) Dummer)

Shrublet, up to 1,2 m tall. Bracteoles obovate to subcircular, 2,5–4,0 × 2–4 mm. *Flowers yellow; October to March. Bushveld. Fourie 1779.*

W S C N E

uniflora (Kentsit) Polhill

(= *Lotononis uniflora* Kentsit)

Herb with erect or decumbent stems. Leaflets mostly narrowly elliptic-oblong, 15–30 × 2–6 mm, thinly to densely pilose. Pods linear-oblong, 25–30 × 3–5 mm, appressed pubescent. *Flowers pale yellow; August to November. Grassland, hillsides, cultivated land. Codd & De Winter 4903.*

W S C N E

Pseudarthria Wight & Arn. (s. Afr.:

1 sp.)

3808000

Verdcourt. 1971. F.T.E.A. 3,1: 483–487.

hookeri Wight & Arn. var. **hookeri**

Tall, erect, shrubby herb; up to 1,5 m high. Stems and undersurfaces of the rather thin leaves pubescent to densely velvety. Leaves 3-foliolate, apex acute. Pods mostly straight, 12–30 mm long, puberulous. *Flowers pink; January to April. Grassland, woodland and abandoned land. Germishuizen 3927.*

W S C N E

Psoralea L. (s. Afr.: 24 spp.)

Burrill Davy. 1932. Fl. Transv. 2: 373–375.

3703000

pinnata L.

Shrub, up to 2 m high. Leaves pinnate; leaflets linear to lanceolate-linear, teretely revolute with very fine sulcus, sparsely pilose. Branchlets, calyx and young parts lanate-villous. Stipules ovate-lanceolate, acuminate, ± 5 mm long. *Flowers blue; December to March. Mountain grassland and forest. Raal 1537.*

W S C N E

Pterocarpus Jacq. (s. Afr.: 3 spp.) 3828000

Polhill. 1971. F.T.E.A. 3,1: 81–91.

angolensis DC.

(= *P. bussei* Harms)

Tree, up to 16 m high. Inflorescences precocious or in axils of young incompletely expanded leaves. Calyx 8–10 mm long, densely hairy. Central seed-bearing part of fruit densely covered with long rigid bristles. *Flowers yellow; August to November. Woodland. Onderstall 942, Buitendag 681.*

W S C N E

lucens Guill. & Perr. subsp. **antunesii** (Taub.) Rojo

(= *P. antunesii* (Taub.) Harms)

Small tree, up to 13 m high. Leaflets 25–40(–55) × 15–25(–30) mm. Inflorescence racemose, axillary. Fruit elliptic, abruptly narrowed or decurrent towards stipe, glabrous. *Flowers yellow; November. Bushveld and mopani veld. Van der Schijff 2963.*

W S C N E

rotundifolius (Sond.) Druce subsp. **rotundifolius**

(= *Dalbergia rotundifolia* Sond.)

Tree, up to 10 m high. Leaflets (30–)50–190(–200) mm, rounded or emarginate at apex. Inflorescence paniculate, terminal. Fruit with wing broadly cuneate or rounded to short stipe, glabrous. *Flowers yellow; October to March. Bushveld. Hemm 517.*

W S C N E

Ptycholobium Harms (s. Afr.: 3 spp.) 3717010

Brummitt. 1965. Regnum veg. 40: 24.

contortum (N.E. Br.) Brummitt

(= *Syllitra contorta* (N.E. Br.) Baker f.,
= *Tephrosia contorta* N.E. Br.)

Dwarf shrub, up to 0,75 m high, clothed with dense whitish tomentum. Leaves 3-foliolate; leaflets obovate, with recurved hook-like apiculus. Pods twisted into 1 loose spiral, densely villous tomentose with white hairs. *Flowers blue; January to April. Bushveld and mopani veld. Acocks 16796.*

W S C N E

plicatum (Oliv.) Harms

(= *Tephrosia plicata* Oliv.)

Dwarf shrub, up to 300 mm tall. Stems hairy. Leaves 3-foliolate; leaflets obovate with prominent venation.

Pods plicately folded. *Flowers white; December to February.* Bushveld, waste ground. *Pole Evans 3879.*

W S C N E

Pueraria DC. (s. Afr.: 1 sp.) 3889000

Ohwi. 1965. Fl. Japan: 570.

lobata (Willd.) Ohwi var. **lobata***

(= *Dolichos lobatus* Willd.)

Robust climber or trailer. Leaflets widely ovate or rhomboidal, up to 210 × 200 mm, entire with shallow lobes. Inflorescence a raceme. Pods long and linear, pubescent. *Flowers purple; April.* Forest. Native to Europe and Asia. *Sawyer sub PRE 659724.*

W S C N E

Requienia DC. (s. Afr.: 2 spp.) 3718010

Brummitt. 1967. Bolm Soc. broteriana 41: 220.

Schreiber. 1970. F.S.W.A. 60: 100.

pseudosphaerosperma (Schinz) Brummitt

(= *Tephrosia pseudosphaerosperma* Schinz)

Perennial herb with slender, erect stems from woody rootstock. Flowers small, 5–7 mm long, solitary or in axillary clusters. Leaves simple, narrowly ovate to elliptic. *Flowers purple; December to February.* Bushveld. *Codd 8457.*

W S C N E

sphaerosperma DC.

(= *Tephrosia sphaerosperma* (DC.) Baker)

Prostrate herb. Leaves simple, broadly ovate to obovate, venation of undersurface prominent. Flowers small, 2–4 mm long, in axillary clusters. Pods 6–8 × 2.5–3.5 mm. *Flowers purple; February.* Grassland. *Morris & Boucher 199.*

W S C N E

Rhynchosia Lour. (s. Afr.: 67 spp.) 3897000

Baker. 1921. Bothalia 1: 113.

Schreiber. 1970. F.S.W.A. 60: 100–106.

Verdcourt. 1971. F.T.E.A. 4: 711–761.

adenodes Eckl. & Zeyh.

(= *R. amatymbica* Eckl. & Zeyh.)

Prostrate perennial herb. Peduncles longer than leaves. Leaves 3-foliolate. Terminal leaflet ovate-orbicular or subrhomboid, resinous-dotted. *Flowers yellow; September to January.* Grassland. *Bredenkamp 135.*

W S C N E

albissima Gand.

Perennial herb, up to 1 m high, tomentose-canescens. Stems rigid. Terminal leaflets obovate. Racemes longer than leaves, many-flowered. Flowers 8–12

mm long. *Flowers yellow; November to December.* Grassland. *Sutton 1269.*

W S C N E

angulosa Schinz

Semiprostrate herb, hairy and somewhat silvery. Leaves shortly petiolate; terminal leaflets elliptic, 30–45 × 10–20 mm. Calyx pilose with long hairs. *Flowers orange; October to November.* Mountain grassland and rocky hillsides. *Codd 571.*

W S C N E

caribaea (Jacq.) DC.

(= *Glycine caribaea* Jacq.,

= *R. congestiflora* Schinz)

Perennial herb. Stems voluble or prostrate, pubescent. Leaves 3-foliolate; terminal leaflets thin, ovate-rhomboid. Racemes longer than leaves, laxly several-flowered. *Flowers yellow and purplish brown.* Bushveld, forest margins and low shrubs. *Leach 12109A.*

W S C N E

clivorum S. Moore

(= *Flemingia macrocalyx* Baker f.)

Soft shrub, up to 2 m high. Terminal leaflets ovate-lanceolate, 50–60 × 18–25 mm, conspicuously nerved below. Standard 15–18 mm long, ovate. *Flowers yellow with reddish brown stripes; July to June.* Forest margins, scrub, mountain grassland and riverbanks. *Hanekom 2282.*

W S C N E

confusa Burt Davy

(= *R. nervosa* Benth. var. *pauciflora* Harv.)

Prostrate herb. Stems voluble. Terminal leaflets ovate or obovate, 13–20 × 12–16 mm, canescent-pubescent. Peduncles slender, 2–4-flowered, shorter than leaves. *Flowers yellow; September to March.* Bushveld and grassveld. *Codd 8428.*

W S C N E

crassifolia Benth.

(= *R. longipes* Harms)

Procumbent herb. Terminal leaflets thick, velvety, elliptic-ovate, 50–55 × 30–42 mm. Peduncles elongate, laxly several-flowered. Standard pubescent, 8–10 mm long. Pods sessile, villous. *Flowers yellow; September to November.* Grassland. *Van Wyk 1751.*

W S C N E

densiflora (Roth) DC. subsp. chrysadenia (Taub.)

Verdc.

(= *R. chrysadenia* Taub.,

= *R. fischeri* Harms)

Climbing, procumbent or ascending herb. Flowers in dense, sessile or subsessile, oblong inflorescences. Sepals with gland-dots yellow to orange-red. Calyx lobes 10–17 mm long. *Flowers yellow; August to March.* Grassland and bushveld. *Crawford 458.*

W S C N E

galpinii Baker f.

Suffrutescent, up to 1 m high. Leaves 3-foliolate, subsessile, indumentum silky and shining beneath; leaflets ovate-lanceolate, 40–50 × 20–25 mm. *Flowers* 20–23 mm long, yellow; *November to December*. Lowveld bush. *Pott sub TRV 16667*.

W	S	C	N	E
---	---	---	---	---

harmsiana Schltr. ex Zahlbr. var. harmsiana

Perennial herb. Stems voluble, branches filiform, puberulous. Terminal leaflets ovate or rhomboid-ovate, 20–30 × 15–25 mm. Racemes axillary, laxly several-flowered. *Flowers* yellow; *March*. Well drained, stony, sandy soil. *Stalmans 500*.

W	S	C	N	E
---	---	---	---	---

hirsuta Eckl. & Zeyh.

Prostrate herb. Terminal leaflets broadly ovate-orbicular, 20–50 × 25–40 mm, rigid, hispid-pubescent. Standard densely pubescent, ± 10 mm long. *Flowers* yellow; *October to November*. Grassland and streambanks. *Smith 3358*.

W	S	C	N	E
---	---	---	---	---

hirta (Andrews) Meikle & Verdc.

(= *Dolichos hirtus* Andrews,
= *R. cyanosperma* Baker)

Robust creeper or climber. Stems 2–8 m long, covered with short ferruginous hairs. Leaflets usually densely velvety beneath. Calyx 16–27 mm long, adpressed greyish pubescent. Seeds blue. *Flowers* pale lemon and maroon; *August to December*. Thornveld, woodland, bushveld, often in disturbed places. *Onderstall 1355*.

W	S	C	N	E
---	---	---	---	---

holosericea Schinz

Prostrate perennial herb. Terminal leaflet circular to broadly circular or broadly obovate, 10–35 × 12–46 mm. Petiole 10–50 mm long. Calyx ± 7 mm long. *Flowers* pale yellow with rusty red lines on back; *December to March*. Grassland, sandy soil. *Henrici 61*.

W	S	C	N	E
---	---	---	---	---

komatiensis Harms

Shrublet, up to 0.9 m high. Terminal leaflets ovate or orbicular-ovate, whitish tomentose below. Peduncles 2-flowered. Corolla ± 18 mm long, 3 times length of calyx. *Flowers* yellow; *July to June*. Grassland, rocky outcrops. *Elan-Puttick 64*.

W	S	C	N	E
---	---	---	---	---

minima (L.) DC. var. minima

(= *Dolichos minimus* L.)

Herbaceous perennial climber. Terminal leaflets rhomboid-ovate or rhomboid-obovate, varying much in size and shape. *Flowers* small, 6–9 mm long. *Flowers* yellow with purple veins; *August to April*. Grassland and disturbed woodland. *Stirton 6798*.

W	S	C	N	E
---	---	---	---	---

minima (L.) DC. var. prostrata (Harv.) Meikle

(= *R. memnonia* (Delile) DC. var. *prostrata* Harv.)

Prostrate herb. Stems puberulous or pubescent. Leaflets mostly rounded at apex, pubescent to velvety on both surfaces. Standard 7–10 mm long, 5–7 mm wide. *Flowers* yellow; *August to March*. Grassland. *Codd 5202*.

W	S	C	N	E
---	---	---	---	---

monophylla Schltr.

(= *R. prostrata* Suess.,

= *R. reptans* Suess.)

Prostrate herb. Stems voluble, branches decumbent. Leaves simple or 3-foliolate. *Flowers* in axils of leaves, fasciculate, ± 11 mm long. Pods obliquely ovate-elliptic. *Flowers* orange; *August to February*. Grassland, rocky slopes. *Germshuizen 3207, Acocks 12441*.

W	S	C	N	E
---	---	---	---	---

nervosa Benth. & Harv. var. nervosa

Prostrate herb. Leaves short-petiolate; terminal leaflets elliptic-oblong or subrhomboid, 30–60 × 15–35 mm, 3-nerved at base, hispid-pubescent. *Flowers* yellow; *September to March*. Grassland. *Smith 1102*.

W	S	C	N	E
---	---	---	---	---

nitens Benth.

Silky silvery shrublet, up to 1 m high. Terminal leaflets broadly ovate or cordate-ovate. Standard pubescent and ± twice as long as calyx. *Flowers* yellow; *August to May*. Bushveld, grassy slopes. *Acocks 12368*.

W	S	C	N	E
---	---	---	---	---

pauciflora Bolus

Virgate shrublet with 3-foliolate leaves. Leaflets rigid, linear-oblong, margins distinctly revolute. Peduncles longer than leaves, always 1-flowered. *Flowers* yellow; *December*. Grassland. *Pott sub TRV 15070*.

W	S	C	N	E
---	---	---	---	---

pentheri Schltr. ex Zahlbr. var. pentheri

Prostrate herb. Calyx glandular. Terminal leaflets suborbicular or ovate, 15–25 × 12–25 mm. Petioles as long (longer than or nearly as long) as leaflets. Standard glabrous. *Flowers* yellow and brown; *December to February*. Grassland. *Devenish 431*.

W	S	C	N	E
---	---	---	---	---

pentheri Schltr. ex Zahlbr. var. hutchinsoniana Burt

Davy

Prostrate herb. Stems thinly pubescent to glabrescent. Petiole very short. Leaflets as broad as long, apex rounded. Calyx distinctly glandular pubescent. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

reptabunda N.E. Br.

Prostrate perennial herb. Terminal leaflets ovate or broadly ovate, 30–45 × 25–40 mm. Stem and leaves pubescent. Peduncle 50–175 mm long, apex laxly 2–6-

flowered. *Flowers yellow; October to February.* Grassland. *Germishuizen 451.*

W S C N E

resinosa (A. Rich.) Baker
(= *Fagelia resinosa* A. Rich.)

Woody scrambler or erect shrub, up to 1.5 m high. Leaflets rhomboid with long-acuminate or acute apices, distinctly paler beneath. Indumentum yellow and very sticky. *Flowers yellow; April to May.* Mixed bush, rocky hillsides. *Codd 7966.*

W S C N E

sordida (E. Mey.) Schinz
(= *R. orthodanum* Benth.)

Erect herb or small shrub, up to 1 m high, silky villous or glabrous. Leaflets elliptic-oblong or lanceolate-oblong. Peduncles shorter than leaves. *Flowers yellow; August to April.* Grassland. *Stalmans 489.*

W S C N E

spectabilis Schinz

Branched shrub, up to 1 m high, silky tomentose. Leaves unifoliate or 3-foliate; terminal leaflets broadly ovate to suborbicular. Standard covered with white hairs externally. Pods 20–25 mm long, hairy. *Flowers yellow; July to June.* Mixed woodland and grassland, rocky hillsides. *Schlechter 4310.*

W S C N E

sublobata (Schumach.) Meikle
(= *Glycine sublobata* Schumach.)

Prostrate or climbing perennial herb. Terminal leaflets rhomboid, 18–80 × 18–85 mm. Pods characteristically inflated, clavate, 20–30 × 8–13 mm, much narrowed at base. *Flowers yellow; October to March.* Grassland, woodland and abandoned cultivations. *Edwards 3266.*

W S C N E

thorncroftii (Baker f.) Burtt Davy

Perennial herb. Stems twining or erect. Leaflets strongly reticulate beneath, acutely mucronate, pubescent only on nerves beneath. *Flowers yellow; March to September.* Grassland. *Stirton 8755.*

W S C N E

totta (Thunb.) DC. var. **totta**
(= *Glycine totta* Thunb.)

Climber or twiner or ascending herb, up to 1 m long. Leaflets distinctly oblong-lanceolate, mostly twice as long as wide. Inflorescence lax and few-flowered, glabrescent to hairy. Pods with long silky hairs ± 2 mm long. *Flowers yellow; July to June.* Grassland. *Germishuizen 2982, 1092.*

W S C N E

vendae C.H. Stirt.

Perennial herb. Stems twining. Leaflets strongly reticulate beneath; terminal leaflet rhombic, 45–87 × 36–65 mm; laterals smaller, strongly gibbous with length: width ratio 2.2–2.4. *Flowers mauve; December to March.*

Wooded watercourses, sandveld and rocky outcrops. *Grobbelaar 2336.*

W S C N E

venulosa (Hiern) K. Schum.
(= *Dolichos venulosus* Hiern,
= *R. hirsuta* Schinz)

Climber, twiner or ascending herb. Stems slender, densely pubescent to velvety with greyish or ferruginous hairs. Leaflets pubescent to densely velvety, venation raised and usually markedly reticulate beneath. *Flowers yellow; October to June.* Grassland, rocky slopes. *Van Wyk 1767.*

W S C N E

villosa (Meisn.) Druce
(= *Eriosema villosum* (Meisn.) C.A. Sm.)

Perennial herb. Stems trailing, branches white-woolly. Leaves 3-foliate, nerves densely white-villous; lateral leaflets, 35–70 × 30–60 mm, much smaller than terminal leaflet, 62–158 × 55–127 mm and broadly ovate to suborbicular. *Flowers yellow and reddish brown; November to February.* Montane grassland. *Germishuizen sub PRE 58771.*

W S C N E

woodii Schinz

Dwarf shrub, up to 400 mm tall, closely leafy. Leaflets ovate to obovate, 3-veined from base. Flowers 11–13 mm long, axillary. *Flowers yellow and orange; August to November.* Grassland and mountain sourveld, rocky slopes. *Codd & Dyer 4472.*

W S C N E

Robinia L. (s. Afr.: 1 sp.)

3733000

Ball. 1968. Fl. Europ. 2: 106.

pseudo-acacia L.*

A robust shrub or small tree, up to 5 m high. Leaves imparipinnate. Stipules spinose. Racemes many-flowered. Flowers 15–20 mm long. *Flowers white; September.* Roadside. Native to North America. *Henderson 655.*

W S C N E

Rothia Pers. (s. Afr.: 1 sp.)

3659000

Milne-Redhead. 1971. F.T.E.A. 4: 811–813.

hirsuta (Guill. & Perr.) Baker

(= *Lotononis desertorum* Dummer,
= *Xerocarpus hirsutus* Guill. & Perr.)

Prostrate annual herb. Stems and leaves pilose. Leaflets oblanceolate. Pods oblong in basal half, the apical half gradually narrowed to an acute apex. *Flowers white, dull yellow and red or lilac; March to April.* Sandy soil. *Van Rooyen 494.*

W S C N E

Sesbania Scop. (s. Afr.: 18 spp.)

3747000

Phillips & Hutchinson. 1921. *Bothalia* 1: 40.
Gillett. 1963. *Kew Bull.* 17: 91–159.
Gillett. 1971. *F.T.E.A.* 3,1: 330–351.

bispinosa (Jacq.) W. Wight var. **bispinosa***

Herbaceous shrublet, up to 2 m high. Stems, peduncle and leaf rhachis often aculeate. Pods narrower than 3 mm, septa $\pm$ 5 mm apart. *Flowers yellow with red-brown spots; November to May.* Riverbanks, vleis. Native to Europe. *Meeuse & Strey 10429.*

W	S	C	N	E
---	---	---	---	---

brevipedunculata J.B. Gillett

Stout, erect herb, up to 0,7 m high. Peduncle rarely as much as 12 mm long. Septa of pod $\pm$ 5 mm apart. *Flowers yellow; March to May.* Roadsides. *Ger-mishuizen 799.*

W	S	C	N	E
---	---	---	---	---

macrantha E. Phillips & Hutch. var. **macrantha**

Softly woody herb or small tree, up to 6 m high. Peduncle and usually stem and leaf rhachis also aculeate. Appendages on standard rounded, without any free tips. Septa of pod 8–11 mm apart. Margins of streams, swamps. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

macrantha E. Phillips & Hutch. var. **levis** J.B. Gillett

Herbaceous shrublet, up to 5 m high, not aculeate. Peduncle rarely under 35 mm long. Septa of pod usually 9–10 mm apart. *Flowers yellow with red-brown spots; March to June.* River and streambanks. *Ger-mishuizen 3826.*

W	S	C	N	E
---	---	---	---	---

notialis J.B. Gillett

Erect annual herb, up to 1 m high. Leaves aculeate; leaflets oblong, glabrous, 5(–9) $\times$ 2(–3) mm. Axis of inflorescence longer than 20 mm. Pods slightly torulose, 80–100 mm long, $\pm$ 2,5 mm wide, septa 4–5 mm apart. *Flowers yellow, standard striped with deep red; February to March.* Vleis. *Mogg 8910.*

W	S	C	N	E
---	---	---	---	---

punicea (Cav.) Benth.*

Shrub, up to 3 m high. Leaflets in 6–20 pairs, up to 25 mm long. Pods up to 100 mm long, 4-winged. *Flowers bright orange; October to April.* Roadsides, streambanks. Native to South America. *Duggan & Henderson 5.*

W	S	C	N	E
---	---	---	---	---

sesban (L.) Merr. subsp. **sesban** var. **nubica** Chiov.

Herbaceous shrub, up to 3 m high, $\pm$ pubescent, at least at leaf bases. Pods 2–4 mm wide, septa 4–6 mm apart. *Flowers yellow; March to August.* Riverbanks, edges of streams. *Codd 6132.*

W	S	C	N	E
---	---	---	---	---

tetraptera Hochst. ex Baker

(= *S. hamata* E. Phillips & Hutch.,
= *S. kirkii* E. Phillips & Hutch.)

Erect annual herb, up to 2 m high. Peduncle aculeate. Appendages on standard rounded. Filament sheath 7–9 mm long. Style pubescent. Pods with 4 wings each wider than 2 mm. Bushveld. *Zwanziger 846.*

W	S	C	N	E
---	---	---	---	---

transvaalensis J.B. Gillett

Shrublet, up to 1 m high. Axis of inflorescence longer than 20 mm, including peduncle of over 5 mm. Pods markedly torulose, $\pm$ 25 mm wide across seeds, 1 mm at septa which are 6–7 mm apart. *Flowers yellowish green with dark purple; January to March.* Riverbanks, roadsides, thornveld. *Nicholas & Bishop 2180.*

W	S	C	N	E
---	---	---	---	---

Smithia Aiton (s. Afr.: 1 sp.)

3796000

Verdcourt. 1970. *Kew Bull.* 24: 15.

erubescens (E. Mey.) Baker f.

Robust, much-branched, dwarf shrub, up to 1 m high. Leaflets with midrib of undersurface hairy. Flowers arranged in an inflorescence with very distinct rhachis, nodulated due to persistent pedicel bases. *Flowers yellow; November to March.* Grassland and streambanks. *Ger-mishuizen 3832.*

W	S	C	N	E
---	---	---	---	---

Sophora L. (s. Afr.: 2 spp.)

3602000

Polhill. 1971. *F.T.E.A.* 3,1: 46.

japonica L.*

Deciduous tree, up to 25 m high. Leaflets in 3–8 pairs, ovate to lanceolate-ovate, glaucous beneath. Fruit moniliform, glabrous. *Flowers in loose panicles; yellow; December to February.* Riverbank. Native to China and Korea. *Henderson 533.*

W	S	C	N	E
---	---	---	---	---

Sphenostylis E. Mey. (s. Afr.: 2 spp.) 3907000

Dyer. 1947. *Flower. Pl. Afr.* 26: t. 1010.
Verdoorn. 1969. *Flower. Pl. Afr.* 39: t. 1521.

angustifolia Sond.

(= *Vigna angustifolia* Benth.)

Suberect, scmiwoody shrublet with stems 250–450 mm long. Leaflets narrowly ovate, acute or acuminate, mucronate. Peduncles 40–80 mm long, subumbellately few-flowered at apex. Pods linear. *Flowers purplish pink; September to February.* Grassland. *Joffe 138.*

W	S	C	N	E
---	---	---	---	---

marginata E. Mey. subsp. **marginata**
(= *Vigna marginata* (E. Mey.) Benth.)

Twining or prostrate, herbaceous or scarcely woody plant. Leaflets oblong-elliptic to ovate-oblong. Inflorescence axillary, racemes short, few-flowered, with long peduncle, 200–300 mm long. Pods linear. *Flowers deep rose; November to March.* Grassland. *Van der Schijff 5878.*

W S C N E

Stylosanthes Sw. (s. Afr.: 1 sp.) 3802000

Verdcourt. 1971. F.T.E.A. 3, 1: 436–440.

fruticosa (Retz.) Alston
(= *Arachis fruticosa* Retz.,
= *S. mucronata* Willd.)

Woody herb or dwarf shrub, up to 1 m high. Stems sparsely to very densely pubescent. Leaflets with lateral veins conspicuously thickened towards margins. Stipules adnate to petiole, bi-apiculate. *Flowers yellow; September to March.* Grassland and woodland. *Stirton 10590.*

W S C N E

Sutherlandia R. Br. ex Aiton f.
(s. Afr.: 5 spp.) 3754000

Phillips & Dyer. 1934. Rev. Sudamer. Bot. 1: 69.
Pole Evans. 1925. Flower. Pl. Afr. 5: t.193.

frutescens (L.) R. Br.

Shrublet, semidecumbent or upright, up to 0,6 m high. Leaves greyish green; leaflets $\pm 20 \times 5$ mm. Seeds borne in inflated pods ± 60 mm long. *Flowers bright red; September to October.* Disturbed areas, like roadsides. *Botha 676.*

W S C N E

microphylla Burch. ex DC.

Shrub, up to 1,3 m high. Leaves 20–130 mm long, pinnate. Flowers 25–37 mm long. Mature pods 2,5–4 times as long as broad, membranous, inflated, 40–60 $\times$ 10–20 mm. *Flowers red; June to March.* Bushveld and grassland. *Codd & De Winter 3090.*

W S C N E

Tephrosia Pers. (s. Afr.: 54 spp.) 3718000

Forbes. 1948. Bothalia 4: 953–1001.
Schrire. 1987. Bothalia 17: 7–15.

acaciifolia Baker
(= *Cracca acaciifolia* Kuntze,
= *T. salicifolia* Schinz)

Many-stemmed herb, up to 0,5 m high. Leaves subsessile, all simple. Flowers in a terminal raceme. Pods 40–55 mm long, densely grey-silky along middle and

dark brown along sutures. *Flowers orange; December to April.* Grassland. *Herman, Retief & Schrire 16.*

W S C N E

aequilata Baker subsp. **australis** Brummitt

Shrub, up to 1,5 m high. Stem, rhachis and pod brown, villous. Leaves 7–10-foliolate. Stipules triangular. Pseudoraceme compact and densely congested. *Flowers purple and white; May to July.* Forest. *Scheepers 357.*

W S C N E

burchellii Burt Davy

Slender, prostrate herb. Stems up to 500 mm long. Leaves shortly petiolate, 5–8-jugate, rhachis hirsute with long hairs; leaflets obovate, 8–14 $\times$ 4–8 mm, glabrous above, lower surface sparsely hirsute. Calyx hirsute with long white hairs. *Flowers pink; November to February.* Grassland and bushveld. *Leistner 2111.*

W S C N E

capensis (Jacq.) Pers. sens. lat.

Procumbent herb, up to 300 mm tall. Stems glabrous. Leaves 2–4-jugate; leaflets subcuneate, oblong or lanceolate, 10–30 $\times$ 5–14 mm, glabrescent above, glabrous or hirsute below, apex obtuse or acute. Pods pubescent. *Flowers reddish purple; September to March.* Grassland. *Stirton 10563.*

W S C N E

cordata Hutch. & Burt Davy

Dwarf shrub, up to 500 mm tall. Leaflets with apex distinctly mucronulate. Stipules broadly ovate and conspicuously cordate at base. Largest stipules longer than 13 mm, chartaceous, maturing purple to maroon. *Flowers purple; October to April.* Forest margins and bushveld. *Elan-Puttick 320.*

W S C N E

elongata E. Mey. var. **elongata**

Herb with prostrate or erect stems up to 0,6 m high. Leaves with prominent venation; leaflets linear-lanceolate, 47–90 $\times$ 6–12 mm; petiole 11–55 mm long. Peduncles 60–200 mm long, laxly racemosely flowered. *Flowers bright orange; September to March.* Grassland and bushveld. *Smith 3347.*

W S C N E

elongata E. Mey. var. **tzaneensis** (H.M.L. Forbes)
Brummitt

(= *T. tzaneensis* H.M.L. Forbes)

Herb with erect or ascending stems up to 400 mm tall. Leaves subsessile or shortly petioled; leaflets linear to oblong-linear, 20–90 $\times$ 5–20 mm. Peduncles 75–320 mm long, racemosely flowered. *Flowers orange; September to February.* Lowveld Sour Bushveld. *Scheepers 469.*

W S C N E

euchroa *I. Verd.*

Erect, dwarf shrub, up to 500 mm tall. Leaflets elliptic to narrowly elliptic with acute apices, (8–)15–35(–45) × (2–)3–7(–12) mm. Youngest foliage densely white or yellowish pubescent and conspicuously dark mucronate. *Flowers pink; November to May.* Open lowveld bush and mopani veld. *Van der Schijff 1824.*

W	S	C	N	E
---	---	---	---	---

forbesii *Baker subsp. interior Brummitt*

Many-stemmed herb, up to 300 mm tall. Leaves simple, linear-oblong to linear-lanceolate, 55–80 × 7–10 mm. Flowers axillary. Pods ± 4.5 mm in diameter, pubescent along sutures. *Flowers pink; December to March.* Bushveld and mopani veld. *Galpin 84.*

W	S	C	N	E
---	---	---	---	---

glomeruliflora *Meisn. subsp. meisneri (Hutch. & Burt Davy) Schrire*

(= *T. meisneri* Hutch. & Burt Davy)

Lax, dwarf shrub, up to 1.2 m high. Stipules broadly ovate and conspicuously cordate at base, largest stipules never longer than 13 mm, scarious, maturing reddish to brown. *Flowers pink and mauve to purple; January to April.* Forest margins and scrub. *Pole Evans sub PRE 55906.*

W	S	C	N	E
---	---	---	---	---

limpopoensis *J.B. Gillett*

Canescent shrub, up to 2 m high. Leaflets glabrous and pale green above, thinly canescent below, folded, mucronate, oblanceolate, 20–40 × 6–10 mm. Bushveld. *Zwanziger 280.*

W	S	C	N	E
---	---	---	---	---

longipes *Meisn. subsp. longipes*

Erect perennial herb, up to 1 m high. Leaflets linear to linear-elliptic, 1–7(8) pairs, (20–)30–100 × (1–)2–7(–14) mm. Pods linear, length : breadth ± 12 : 1, hairy. *Flowers purple; November to May.* Bushveld, grassland and woodland. *Codd 2661.*

W	S	C	N	E
---	---	---	---	---

lupinifolia *DC.*

(= *Cracca lupinifolia* Kuntze,
= *Galega lupinifolia* Burch.)

Prostrate herb. Leaves 4- or 5-foliolate, palmate; leaflets oblanceolate, 15–85 × 4–18 mm, margin thickened. Pods linear, flat, pubescent, 25–35 × 3–5 mm. *Flowers mauve; December to April.* Grassland, disturbed places. *Grobbelaar 572.*

W	S	C	N	E
---	---	---	---	---

macropoda (*E. Mey.*) *Harv. var. macropoda*

(= *Apodynomene macropoda* E. Mey.)

Prostrate to erect herb. Leaves 3–7-foliolate; leaflets obovate to narrowly obovate, 8–20 × 3–6 mm. Stipules maturing brown to dark brown, dying back and curling away from stems. *Flowers pinkish to red; October to February.* Grassland. *Grobbelaar 1672.*

W	S	C	N	E
---	---	---	---	---

macropoda (*E. Mey.*) *Harv. var. diffusa* (*E. Mey.*)

Schrire

(= *Apodynomene diffusa* E. Mey.)

Scrambler. Leaves 5–9-foliolate, with leaflets narrower, elliptic, 8–20 × 3–6 mm. Stipules maturing brown to dark brown, dying back and curling away from stems. *Flowers yellow and pink; March.* Montane grassland. *Venter 7708.*

W	S	C	N	E
---	---	---	---	---

multijuga *R.G.N. Young*

(= *T. woodii* Burt Davy)

Herb with erect or decumbent stems up to 400 mm tall. Leaves 3–10-jugate; leaflets narrow oblong-elliptic, 7–20 × 1.5–4.5 mm, acuminate, mucronate. Peduncles 150–160 mm long. Pods 35 × 3 mm, linear subfalcate, appressedly pubescent. *Flowers pink or reddish purple; November to April.* Bushveld. *Jacobsen 1709.*

W	S	C	N	E
---	---	---	---	---

natalensis *H.M.L. Forbes subsp. natalensis*

Prostrate herb. Pseudoracemes elongate, with at least 3 distinct flowering nodes along rhachis. Calyx teeth lanceolate to linear, equal to or longer than tube. *Flowers pinkish purple; September to December.* Grassland. *Sidey 1509.*

W	S	C	N	E
---	---	---	---	---

noctiflora *Bojer ex Baker*

Straggling, softly woody annual or short-lived perennial herb, up to 1.5 m high. Stems densely covered with appressed hairs. Leaf rhachis often over 70 mm long. Lower calyx tooth usually more than twice as long as upper. Pods markedly upcurved, ± 5 mm long. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

pietersii *H.M.L. Forbes*

Stems slender, ascending, simple or laxly branched, 1–4 arising from rootstock, up to 100 mm long. Leaves unifoliolate, linear-lanceolate, 28–70 mm long. Petioles slender, 3–12 mm long. Flowers axillary, solitary or 3 together. Pods slightly falcate, pubescent, 2–3 × 3 mm. *Flowers purple; January.* Lowveld. *Van der Schijff 1798.*

W	S	C	N	E
---	---	---	---	---

polystachya *E. Mey. var. polystachya*

Shrublet, up to 1.5 m high. Leaflets in 3–9 pairs, cuneate-oblong, 7–30 × 3.5–9.0 mm. Inflorescences terminal and axillary, laxly racemose and many-flowered, up to 270 mm long. *Flowers white, pink or carmine; February to March.* Grassland. *Krynauw 1341.*

W	S	C	N	E
---	---	---	---	---

polystachya *E. Mey. var. hirta* *Harv.*

Shrub, up to 1 m high. Stems, branches and inflorescences roughly rusty-pubescent. Racemes shorter and

more densely flowered than usual and pods more hairy. Edge of forest. *Venda Herb.* 1280.

W S C N E

polystachya *E. Mey. var. latifolia* Harv.

Erect shrublet, up to 1 m high. Leaves 5–8-jugate; leaflets oblong, retuse, 11–32 × 5–13 mm. Longer, broader thinner and less hairy than var. *polystachya*. *Flowers white, pink or pale mauve; February.* Bush. *Stalmans* 442.

W S C N E

purpurea (*L.*) Pers. subsp. **leptostachya** (*DC.*) Brummitt var. **leptostachya**

(= *T. leptostachya* DC.,
= *T. lineata* Schum. & Thonn.)

Herb with procumbent or ascending stems. Stems usually ± straggling, subglabrous or with closely appressed hairs. *Flowers white or purple; December to April.* Bushveld and grassland. *Mogg* 14648.

W S C N E

purpurea (*L.*) Pers. subsp. **leptostachya** (*DC.*) Brummitt var. **delagoensis** (*H.M.L. Forbes*) Brummitt
(= *T. delagoensis* H.M.L. Forbes)

Shrub, up to 0.6 m high. Stems stout, sometimes becoming woody in lower parts, younger stems with appressed to spreading hairs. *Flowers dark red; October to February.* Lowveld, roadside. *Zambatis* 1241.

W S C N E

purpurea (*L.*) Pers. subsp. **leptostachya** (*DC.*) Brummitt var. **pubescens** Baker

(= *T. burchellii* Burt Davy p.p.,
= *T. transvaalensis* Hutch. & Burt Davy)

Herb with procumbent or ascending stems. Stems usually ± straggling, covered with spreading or ascending hairs. *Flowers pink or mauve; November to March.* Bushveld. *Theron* 3563.

W S C N E

radicans Baker

Prostrate, mat-forming herb. Leaflets obtriangular to broadly obovate, up to 20(–26) mm long. Pods shortly oblong, (8–)12–25 mm long, with rounded apex. *Flowers reddish pink; January to March.* Grassland. *Bredenkamp & Van Vuuren* 356.

W S C N E

reptans Baker var. **reptans**

(= *T. godmaniae* Baker f.)

Herb with decumbent stems, 1 m or longer. Stems moderately to densely yellowish or greyish pilose. Petiole and rhachis together 40–110(–120) mm long. Calyx shortly pubescent. *Flowers pink, purple or blue; January and April.* Grassland. *Stephan* 303.

W S C N E

retusa Burt Davy

Slender, procumbent to erect perennial herb with many flexuous stems. Leaflets 9–13, very narrowly elliptic to

narrowly oblanceolate, 6–25(–28) mm long. Pseudoracemes laxly flowered. Pods linear, 35–55 mm long. *Flowers purple; October to March.* Grassland. *Elan-Puttick* 254.

W S C N E

rhodesica Baker f. var. **rhodesica**

(= *T. polystachyoides* sensu Burt Davy)

Shrublet, up to 1 m high. Stems rufo-tomentose. Leaflets in 5–17 pairs, oblong or elliptic, 15–30 × 5–12 mm. Calyx densely long pilose, lobes linear-lanceolate, much longer than tube. Pods 30–38 × 3–4 mm, falcate, densely tawny pubescent. *Flowers mauve; January to April.* Mopani veld and bushveld, disturbed places. *Acocks* 12431.

W S C N E

rhodesica Baker f. var. **evansii** (*Hutch. & Burt Davy*)

Brummitt

(= *T. evansii* Hutch. & Burt Davy)

Shrublet, up to 1 m high. Stems pubescent with greyish hairs. Leaves 6–9-jugate; leaflets oblanceolate, mucronate. Standard 11 × 9–10 mm. Pods 30–40 × 3–4 mm, falcate, tomentose. *Flowers mauve; January to April.* Bushveld, rock crevices. *Van der Schijff* 186.

W S C N E

semiglabra Sond.

(= *Cracca semiglabra* Kuntze)

Prostrate perennial herb. Leaves 3–6-jugate; leaflets oblong-lanceolate, 10–25 × 5–10 mm, recurved-mucronate, glabrous above, rufo-tomentose below. Pods pubescent. *Flowers purplish pink; November to April.* Grassland. *Germishuizen* 70.

W S C N E

shiluanensis Schinz

(= *T. spathacea* Hutch. & Burt Davy)

Much-branched shrublet, up to 1 m high. Youngest leaves densely appressed canescent. Bracts 1–6 mm long, minutely puberulent to sparsely pubescent. Calyx lobes often maturing bristle-like and reflexed apically. *Flowers purplish pink; November to April.* Grassland, streambanks. *Codd* 6961.

W S C N E

subulata Hutch. & Burt Davy

Shrub, up to 2 m high. Leaflets oblong, 20–25 mm long, retuse, with mucro 1–2 mm long. Calyx teeth narrowly subulate, 4–7 mm long, significantly longer than tube. *Flowers bright pink; January to March.* Forest margin. *Van der Merwe* 247.

W S C N E

uniflora Pers.

Sprawling or erect herb, up to 500 mm tall. Leaves grey. Flowers solitary. *Flowers mauve-pink; March.* Disturbed areas or along rivers. *Retief* 564.

W S C N E

villosa (L.) Pers. subsp. **ehrenbergiana** (Schweinf.)
Brummitt var. **ehrenbergiana**

Slender, erect, much-branched herb, up to 1 m tall. Stems with spreading or deflexed brown or brownish grey hairs. Pods (30–)35–46(–54) × 4,5–6,5(–7,0) mm. *Flowers deep pink; January to March.* Bushveld and grassland. *Germishuizen 5095.*

W S C N E

villosa (L.) Pers. subsp. **ehrenbergiana** (Schweinf.)
Brummitt var. **daviesii** Brummitt

Shrublet, up to 1 m high. Stems with appressed hairs. Petiole (2–)5–16(–21) mm. Leaflets (7–)12–35(–42) × (3–)6–11(–14) mm. Pods (30–)35–46(–54) mm. *Flowers purple pink; February to March.* Mopani veld, rocky slopes. *Van Rooyen 3275.*

W S C N E

virgata H.M.L. Forbes

Dwarf shrub, up to 200 mm tall. Leaves simple, sessile or subsessile, linear-lanceolate, 15–25 × 2 mm, greyish green. Pods linear, flattened, 15 × 3 mm. *Flowers mauve; January to March.* Savanna. *Grobbelaar 2369.*

W S C N E

zoutpansbergensis Bremek.

Herb, up to 400 mm tall. Stems and undersurface of leaflets sericeo-pubescent. Racemes terminal, densely many-flowered. Pods ovoid or oblong, 12–15 × 6–7 mm, densely pubescent. *Flowers orange; January to April.* Bushveld and mopani veld. *Codd 8490.*

W S C N E

Teramnus P. Browne (s. Afr.: 1 sp.) 3866000

Verdcourt. 1970. Kew Bull. 24: 266.
Verdcourt. 1971. F.T.E.A. 4: 533–541.

labialis (L.f.) Spreng. subsp. **labialis**

(= *Glycine debilis* Aiton,
= *Glycine labialis* L.f.)

Twiner or herbaceous climber. Leaflets ovate to narrowly ovate, pilose. Inflorescence axillary, racemose. Flowers small, 5,0 × 3,5 mm. Pods linear, 25–60 × 2–4 mm, densely covered with hairs. *Flowers white; November to April.* Bushveld, grass patches. *Acocks 16664.*

W S C N E

Trifolium L. (s. Afr.: 19 spp.) 3690000

Harvey. 1862. F.C. 2: 158–161.
Zohary & Heller. 1984. The genus *Trifolium*.

africanum Ser. var. **africanum**

Perennial herb, up to 250 mm tall. Leaflets 2–4 times as long as wide. Free portion of stipules triangular-

lanceolate. Bracts up to 3 mm long, subulate. Calyx densely hirsute. *Flowers brick-red; October to April.* Grassland. *Codd 8423.*

W S C N E

africanum Ser. var. **lydenburgense** J.B. Gillett

Perennial herb, up to 300 mm tall. Leaflets 4–10 times as long as wide. Free portion of stipules triangular-lanceolate. Bracts inconspicuous or up to 1 mm broad, ovate, truncate. Calyx sparingly villous. *Flowers red or deep pink or purple; October to March.* Streambanks and vleis. *Germishuizen 83.*

W S C N E

burchellianum Ser. subsp. **burchellianum**

(= *T. repens* Thunb.)

Procumbent or prostrate perennial herb. Leaflets up to 10 mm broad. Free portion of stipules long and many-nerved. Calyx teeth subulate from base, twice as long as tube. Inflorescences rarely more than 20 mm in diameter. *Flowers purple; September to November.* Streambanks. *Schweickerdt sub PRE 59081.*

W S C N E

campestre Schreb. var. **campestre***

(= *T. agrarium* L.,
= *T. procumbens* L.)

Annual herb with erect, ascending or prostrate stems. Stems and leaves green. Terminal leaflet stalked. *Flowers yellow; April.* Roadsides. Native to Europe and Asia. *Jooste sub PRE 55007.*

W S C N E

dubium Sibth.

(= *T. filiforme* L.)*

Annual herb with many stems. Leaves shortly petiolate. Heads 5–20-flowered. Standard boat-shaped. Pods distinctly stalked in calyx. *Flowers light yellow; October to December.* Riverbanks. Native to Europe and Asia. *Galpin 12476.*

W S C N E

pratense L. var. **pratense***

Perennial herb, up to 0,6 m high. Stems with appressed white hairs. Free part of stipules triangular, abruptly awned. *Flowers many, usually 15–18 mm long; pink or pale mauve; November to March.* Disturbed places. Native to Europe. *J.B.G. 3924.*

W S C N E

repens L. var. **repens***

(= *T. nigrescens* Schur)

Perennial herb. Stems widely creeping or with long basal runners. Leaflets cuneate-obovate to broadly oblong. Peduncles arising from prostrate stems. *Flowers white; August to March.* Disturbed grassland, riverbanks and lawns. Native to Europe and Asia. *Ubbink 723.*

W S C N E

Trigonella L. (s. Afr.: 3 spp.) 3687000

Schreiber, 1973. Mitt. bot. StSamml., Münch. 11: 148.

anguina Delile

Prostrate annual herb with stems up to 300 mm long. Leaflets obtriangular, toothed in upper part. Pods torulose and plicate, 7–10 × 1,5–2,0 mm. *Flowers yellow; March*. Edges of dams. *Liebenberg 2993*.

W S C N E

Ulex L. (s. Afr.: 1 sp.) 3681000

Guinea & Webb, 1986. Fl. Europ. 2: 102.

europaeus L.*

Spiny shrub, up to 2,5 m high. Leaves alternate, 3-foliate on seedlings, but on mature plants reduced to scale-like or narrow, usually spine-like phyllodes. *Flowers yellow; February*. Roadsides. Native of Europe and Asia. *Kluge 2400*.

W S C N E

Vicia L. (s. Afr.: 7 spp.) 3852000

Ball, 1968. Fl. Europ. 2: 129.

benghalensis L.*(= *V. atropurpurea* Desf.)

Villous annual or short-lived perennial herb, up to 0,8 m high. Calyx tube strongly gibbous at base. Corolla usually black at tip; limb of standard ± as long as claw. Racemes shorter than or equalling leaves. *Flowers dark red; November*. Grassland. Native to Europe and Asia. *Pienaar 723*.

W S C N E

sativa L.*

Annual herb, up to 0,8 m high. Upper leaves with branched tendril. Hilum one-fifth to one-quarter of circumference of seed. *Flowers mauve; October to April*. Grassland, cultivated land and roadsides. Region of origin uncertain. *Germishuizen 1108*.

W S C N E

villosa Roth*

Scrambling annual herb, up to 2 m high. Stems villous. Racemes usually longer than leaves. Lower calyx teeth longer than tube. *Flowers violet or purple; November to April*. Weed. Native to Europe and Asia. *Repton 1295*.

W S C N E

Vigna Savi (s. Afr.: 17 spp.) 3905000

Pienaar. A taxonomic revision of the genus *Vigna* Savi (Fabaceae) in southern Africa. M.Sc. thesis, University of Pretoria.

Pienaar & Van Wyk, 1992. S. Afr. J. Bot. 58,6: 420.

friesiorum Harms var. friesiorum

Perennial herb. Leaves 3-foliate, oblong, elliptic to linear-lanceolate, slightly lobed at base; glabrous to pubescent or pilose on both surfaces with characteristic short marginal hairs lying at right angles to margin. Calyx glabrous or hairy with yellowish or white hairs. Anther glands absent. *Flowers violet*. Grassland. No specimens at PRE.

W S C N E

frutescens A. Rich. subsp. frutescens var. frutescens(= *V. decipiens* Harv.,= *V. pseudotriloba* Harms)

Prostrate or climbing perennial herb, with velvety, light-coloured hairs, rarely glabrous. Leaflets 3-nerved from base, then reticulate. Standard large, oblate, up to 30 mm long and broad. Style with long spathe-like beak, up to 2 mm long. *Flowers lilac to almost white; October to February*. Open woodland. *Germishuizen 910*.

W S C N E

kokii B.J. Pienaar

Twiner. Leaflets oblong with rounded bases and apices in youth, becoming rhombic or sublobular at maturity. Stipules reflexed. Inflorescences contracted, peduncles alate, bearing 1 pair of flowers at apex. *Flowers yellowish green, flushed violet; November to February*. Dense undergrowth of dry woodland. *Pienaar 1364*.

W S C N E

luteola (Jacq.) Benth.(= *Dolichos luteolus* Jacq.)

Perennial climber. Stems pubescent to glabrescent, hairs soft, silky. Leaflets narrowly ovate to broadly obovate with apex obtuse or emarginate, base cuneate. Standard broadly reniform, emarginate. Style prolongation thick, obtuse, tongue-shaped. Legumes partially compressed, slightly constricted between seeds, pubescent to glabrescent with long adpressed, soft hairs. *Flowers yellow; September to December*. Damp to marshy seepage grassland. *Codd 6131*.

W S C N E

mudenia B.J. Pienaar

Leaflets ovate, apex acute, base cuneate at all stages. Style prolongation an oblique thimble-shaped protuberance. *Flowers cream flushed with green and yellow spot at base of standard*. PRE specimen on loan.

W S C N E

nervosa Markötter(= *V. galpinii* Burtt Davy)

Stems delicate, creeping among rocks or twining in grassland. Stipules ribbed, not always prominent, both ends often rounded. Style prolongation horizontal, up to 0,4 mm long, hammer-shaped as a whole. *Flowers small, solitary, pink or purple; January to March*. Grassland. *Pienaar 1360*.

W S C N E

oblongifolia A. Rich. var. **oblongifolia**(= *V. wilmsii* Burtt Davy)

Prostrate or twining annual herb. Leaflets ovate to lanceolate, apex acute, base obtuse, up to 120 × 22 mm. Standard narrow, scarcely emarginate, the whole cuneiform, both pairs callosities vertical, spur long, 10–12 mm long. Style prolongation a long beak, 0.7–0.8 mm long. Legumes compressed, 40–65 mm long. Seeds yellowish to brown-grey. *Flowers mauve; February to April*. Grassland. Codd 5250.

W S C N E

oblongifolia A. Rich. var. **parviflora** (Welw. ex Baker) Verdc.

Prostrate or twining annual herb. Leaflets ovate to lanceolate, apex acute, base obtuse, 15–80 × 2–25 mm. Standard narrow, scarcely emarginate, the whole cuneiform, both pairs callosities vertical, spur long, 6–8 mm long. Style prolongation a long beak, ± 0.3–0.4 mm long. Legumes compressed, 30–40 mm long. Seeds yellowish to brown-grey. *Flowers yellow; March*. Bushveld and grassland. Germishuizen 3714.

W S C N E

unguiculata (L.) Walp. subsp. **dekindtiana** (Harms) Verdc. var. **dekindtiana**

Stems scarcely patent, scabrid or glabrous, angular, much-branched horizontally at soil level, green to red. Root system markedly shallow, sometimes thickening, much-branched. Leaflets papyraceous, uniformly elongate-triangular or lower leaflets elongate-triangular and upper leaflets hastate, glabrous, red-veined or flushed red on undersurface, apex acute. Stipules lanceolate or ovate. Spurs long or short and adnate, often red. Calyx lobes shorter or equalling tube. *Flowers mauve; October to May*. Bushveld, woodland and grassland. Pienaar 1357.

W S C N E

unguiculata (L.) Walp. subsp. **protracta** (E. Mey.) B.J. Pienaar(= *Scytalis protracta* E. Mey.)

Stems patently hairy or velvety. Stipules conspicuously large, up to 20 × 8 mm, broadly ovate, dark green, indumentum varying from abundantly strigose to sparingly hairy over entire surface or on veins only or glabrous, margins always coarsely ciliate. Calyx lobes longer than tube. Standard orbiculate-obovate, up to 22 × 25 mm. *Flowers blue to purple; October to January*. Grassland. Galpin 12519.

W S C N E

unguiculata (L.) Walp. subsp. **stenophylla** (Harv.) Maréchal et al.

Stems not partially thin, commonly ridged, scabrid to sparsely patent, green to grey-green. Leaflets lanceolate to linear, much longer than broad, seldom basally lobed, apex acuminate. Stipules lanceolate, usually slender-spurred. Inflorescence contracted, usually 2-flowered. Standard ± 14 × 17 mm. Legumes ± 100 mm long, grey to black, pubescent.

Flowers mauve; January to March. Grassland. Germishuizen 772.

W S C N E

unguiculata (L.) Walp. subsp. **tenuis** (E. Mey.)Maréchal et al. var. **tenuis**

Stems prostrate. Leaflets oblong to lanceolate, base gibbose, truncate, apex obtuse; lateral leaflets asymmetric, apiculate, thinly textured. Stipules small, ovate. Legume black, ± 60 mm long, scabrid with longer strigose hairs along margin. No specimens in PRE.

W S C N E

vexillata (L.) A. Rich. var. **vexillata**

Perennial, usually densely ferruginous. Terminal leaflets broadly or narrowly ovate to elliptic or rhombic-ovate, base essentially cuneate to ± obtuse, up to 120 × 55 mm, strigose. Peduncles usually as thick as or thinner than straggling or twining stems. Calyx lobes longer than tube. Legumes up to ± 100 mm long. *Flowers white with a bright purple centre and yellow markings; December to March*. Woodland and grassland. Germishuizen 152.

W S C N E

vexillata (L.) A. Rich. var. **angustifolia** (Schumach. & Thonn.) Baker(= *Plectropis angustifolia* Schumach. & Thonn.)

Robust twiner, sometimes prostrate. Stems often puberulous to aculeate, ferruginous. Leaflets lanceolate to linear, ± 40–150 × 4–25 mm, apex acuminate, base truncate or obtuse, strigose to glabrescent. Calyx lobes usually shorter than tube, 2–3 mm long. *Flowers deep mauve; October to February*. Grassland. Mogg 17558.

W S C N E

vexillata (L.) A. Rich. var. **davyi** (Bulus) B.J. Pienaar(= *V. davyi* Bulus)

Perennial. Stems densely ferruginous, setaceous, hairs sometimes light-coloured. Leaflets sometimes all unifoliate, or 1-, 2- or 3-foliate on the same stem, ± rhombic to broadly ovate with base cuneate. Calyx lobes much longer than tube. *Flowers purple; September to December*. Grassland. Sidey 1956.

W S C N E

Xanthocercis Baill. (s. Afr.: 1 sp.) 3847000

Dumaz-le-Grand. 1953. Bull. Soc. bot. Fr. 99: 314.

Van Wyk. 1984. Field guide to the trees of the Kruger National Park: 98.

zambesiaca (Baker) Dumaz-le-Grand(= *Pseudocadia zambesiaca* (Baker) Harms)

Evergreen tree, up to 30 m high. Leaves imparipinnate with 7 pairs of subopposite to alternate leaflets. Fruit unusual, a large berry, 25 × 17 mm, yellowish brown when ripe, 1-seeded. *Flowers white or pale yellow; November to December*. Riverine forest, mopani veld, riverbanks. Vahrmeijer 1519.

W S C N E

Xeroderris Roberty (s. Afr.: 1 sp.) 3838010

Polhill. 1971. F.T.E.A. 3,1: 91.

stuhlmannii (Taub.) Mendonça & E.P. Sousa
(= *Ostryoderris stuhlmannii* (Taub.) Harms)

Tree, up to 18 m high. Leaflets oblong-ovate, bluntly pointed to shortly rounded at apex. Flowers in lateral spreading panicles. Fruit oblong, winged along both edges. *Flowers white; November.* Mopani veld and sandveld. *Van der Schijff 5233.*

W S C N E

Zornia J.F. Gmel. (s. Afr.: 4 spp.) 3804000

Mohlenbrock. 1961. Webbia 16: 1-141.

Milne-Redhead. 1971. F.T.E.A. Leguminosae 3,1: 442-450.

capensis Pers.(= *Z. tetraphylla* Michx. var. *capensis* (Pers.) Harv.)

Procumbent perennial herb. Leaves with 4 leaflets. Loments with glabrous, bristleless, 2,0-2,4 × 2,0-2,4 mm, glandular articles. Bracts ovate, punctate. *Flowers yellow; October to March.* Grassland. *Germishuizen 2989.*

W S C N E

glochidiata DC.

Erect annual herb, up to 500 mm tall. Leaves with 2 leaflets; leaflets lanceolate. Loments usually with 4 articles, articles ± 3,2 × 2,7 mm, with numerous retrorsely hairy bristles up to 2,5 mm. *Flowers yellow; December to February.* Bushveld, along roadsides. *Zambatis 1124.*

W S C N E

linearis E. Mey.(= *Z. tetraphylla* Michx. var. *linearis* (E. Mey.) Harv.)

Erect perennial herb; up to 400 mm tall. Leaves with 4 leaflets; leaflets filiform. Bracts glabrous. Fruit with articles glabrous, with numerous hairy bristles 0,2-0,5 mm long. *Flowers yellow; November to April.* Grassland. *Theron 1613.*

W S C N E

milneana Mohlenbr.

Prostrate perennial herb. Stems up to 0,75 m long. Leaves with 4 leaflets. Bracts ovate-acuminate, 12 × 7 mm. Inflorescence crowded at tip. Loments bristly. *Flowers yellow; October to March.* Grassland. *Pettifer 245.*

W S C N E

FLACOURTIACEAE

Trees or shrubs, armed or unarmed. Leaves alternate, often with stipules. Flowers unisexual, male and female on separate plants, regular. Sepals usually not clearly distinguishable from petals, free. Petals 5, free. Stamens 8-10 or more numerous, free. Ovary superior, 1-locular. Fruit a berry or capsule.

Key after Killick in F.S.A. 22: 53-54 (1976).

- 1a Petals with fleshy gland on inner face or staminodes petaloid with fleshy glands 2
- 1b Petals or petaloid staminodes without fleshy glands; petals sometimes absent 3
- 2a Stamens numerous; petals spirally arranged *Rawsonia*
- 2b Stamens 10-12; petals whorled *Kiggelaria*
- 3a Petals present 4
- 3b Petals absent 9
- 4a Petals more than sepals 5
- 4b Petals as many as sepals 6
- 5a Branches spiny; fruit globose, indehiscent *Oncoba*
- 5b Branches without spines; fruit ovoid, beaked, dehiscing into 4-8 valves *Xylotheca*
- 6a Stamens numerous, not collected in bundles opposite petals; fruit a berry *Scolopia*
- 6b Stamens equal in number to petals or in bundles opposite petals; fruit usually a capsule 7
- 7a Leaves with 5-9 nerves from base; flowers unisexual; seed with red aril *Trimeria*
- 7b Leaves penninerved; flowers bisexual; seed without aril 8
- 8a Style simple with capitate or minutely bilobed stigma; flowers in pedunculate cymes; stipules deltoid *Gerrardina*
- 8b Styles 2-6 or 2-6-cleft; flowers in racemes or panicles; stipules absent or large and orbicular or reniform *Homalium*
- 9a Stamens in bundles of 3-10 alternating with disc glands *Trimeria*
- 9b Stamens not in bundles 10
- 10a Flowers bisexual; style very short; stigma peltate; leaves narrowly elliptic to oblanceolate *Aphloia*
- 10b Flowers unisexual or more rarely bisexual; styles 2-8; leaves elliptic to obovate or orbicular 11
- 11a Stamens surrounded by ring of disc glands; ovary incompletely 4-8-locular with 2 ovules per loculus, one above the other *Flacourtia*
- 11b Stamens intermingled with disc glands and alternating with them; ovules 1-6 per placenta *Dovyalis*

Aphloia (DC.) Benn. (s. Afr.: 1 sp.) 5326000

Killick. 1976. F.S.A. 22: 80–82.

theiformis (Vahl) Benn.

Tree or shrub, up to 10 m high. Branchlets longitudinally striate. Leaves elliptic, serrulate, 30–80 × 10–30 mm. Pedicels up to 20 mm long. *Sepals white (no petals); September to January*. Forest. *Scheepers* 679.

W S C N E

Dovyalis E. Mey. ex Arn. (s. Afr.: 6 spp.)

5328000

Langenegger. 1976. F.S.A. 22: 84–90.

caffra (Hook. f. & Harv.) Hook. f.(= *Aberia caffra* Hook. f. & Harv.)

Tree or shrub, up to 6 m high. Ultimate branchlets often abbreviated, up to ± 20 mm long or forming cushion-like structures. Leaves fascicled; alternate on young shoots. Ovary with 5–7 placentas, each placenta with 2 ovules; styles 5–7. Fruit 30–40 mm in diameter, with many seeds. *Flowers light green; August to November*. Mixed scrub, riverine bush, open woodland and forest. *Hemm* 262.

W S C N E

lucida Sim

Tree or shrub, up to 10 m high. Calyx lobes of female flowers 1.5–2.0 mm long at anthesis, not accrescent. Ovary with 2 or 3 placentas; styles 2 or 3. Exocarp of fruit hairy or papillose. *Male flowers light green; female flowers yellow-green; June to October*. Scrub forest and forest. *Codd* 1687.

W S C N E

ramnoides (Burch. ex DC.) Harv.

Tree or shrub, up to 5 m high. Leaves ovate to elliptic-ovate; leaf base cordate to truncate; secondary nerves tending to spread towards leaf margin. Ovary with 2 or 3 placentas; styles 2 or 3. Exocarp of fruit glabrous. Testa of seed hairy. *Flowers light green; February*. On riverbanks, temperate ravine forest, scrub forest and thornveld. *Strey* 3555.

W S C N E

zeyheri (Sond.) Warb.(= *D. tristis* (Sond.) Warb., = *Aberia zeyheri* Sond.)

Tree or shrub, up to 11 m high. Calyx lobes of female flowers 4–6 mm long at anthesis, accrescent. Ovary with 2 or 3 placentas; styles 2 or 3. Exocarp of fruit hairy or papillose. *Flowers yellow-green; September to April*. Forest margins, open woodland and stream-banks, often among rocks. *Balsinhas* 3545.

W S C N E

Flacourtia Comm. ex L'Hér. (s. Afr.: 1 sp.)

5327000

Killick. 1976. F.S.A. 22: 82–84.

indica (Burm. f.) Merr.(= *F. hirtiuscula* Oliv.)

Tree or shrub, 1.5–16.0 m high, with or without spines. Leaves elliptic, ovate or obovate, with crenate margins. Fruits red, globose, up to 30 mm in diameter. *Sepals greenish (no petals); October to February*. Scrub, woodland and forest. *Codd* 5057.

W S C N E

Gerrardina Oliv. (s. Afr.: 1 sp.)

5312000

Killick. 1976. F.S.A. 22: 72–74.

foliosa Oliv.

Shrub or tree, up to 10 m high. Leaves elliptic-acute, coriaceous. Peduncles erect, 10–40 mm long, slender. *Flowers white; July to June*. On rocky hillsides, krantzes and in forest. *Mogg* 33299.

W S C N E

Homalium Jacq. (s. Afr.: 3 spp.)

5313000

Killick. 1976. F.S.A. 22: 74–77.

dentatum (Harv.) Warb.(= *Blackwellia dentata* Harv.)

Tree, 6–30 m high. Leaves broadly elliptic, 55–90 × 35–55 mm. Stamens solitary at base of each petal. *Flowers white; October to April*. Scrub and forest. *Codd* 10566.

W S C N E

Kiggelaria L. (s. Afr.: 1 sp.)

5296000

Killick. 1976. F.S.A. 22: 60–63.

africana L.

Shrub or tree, up to 17 m high. Bark pale grey, smooth. Leaves glabrous or white or rusty stellate, with hairy pockets in axils of veins below. Seeds bright orange-red. *Flowers yellowish green; September to December and April to June*. Fairly open forest, kloofs, along streams and in scrub. *Codd* 6658.

W S C N E

Oncoba Forssk. (s. Afr.: 1 sp.)

5284000

Killick. 1976. F.S.A. 22: 56–58.

spinosa Forssk.

Small tree or shrub, up to 5 m high. Branches conspicuously lenticillate, with slender, sharp spines up to 50 mm long. *Flowers white; October to February*. Riverbanks, in woodland and scrub forest. *Hemm* 302.

W S C N E

Rawsonia Harv. & Sond. (s. Afr.: 1 sp.) 5275000
 Killick. 1976. F.S.A. 22: 54–56.

lucida Harv. & Sond.

Tree, up to 15 m high. Rigidly coriaceous leaves with spinulose-serrate margins. Channelled, incurved petiole. *Flowers white or creamy white; October and November.* Scrub-forest and forest. *Scheepers 752.*

W S C N E

Scolopia Schreb. (s. Afr.: 5 spp.) 5304000
 Killick. 1976. F.S.A. 22: 63–70.

mundii (Eckl. & Zeyh.) Warb.

Shrub or tree, up to 16 m high. Leaves elliptic or ovate with cuneate base, apex acuminate, margins closely and regularly callose-serrate or serrulate throughout whole length of blade, upper surface without flaky, waxy covering. *Flowers racemose, greenish white.* In forest. *Devenish 1024.*

W S C N E

zeyheri (Nees) Harv.
 (= *S. ecklonii* (Nees) Harv.)

Shrub or tree, up to 13 m high. Leaves narrowly to broadly obovate, sometimes elliptic or ovate with narrowly cuneate base, apex acute, margins entire, repand or distantly crenate-serrate with teeth in upper half, upper surface with flaky, waxy covering. *Flowers racemose; cream, green or yellow; June to November and in March.* Bush clumps, scrub and forest. *Roberts Tvl. Mus. 32928.*

W S C N E

Trimeria Harv. (s. Afr.: 2 spp.) 5315000
 Killick. 1976. F.S.A. 22: 77–80.

grandifolia (Hochst.) Warb.

(= *T. alnifolia* (Hook.) Harv.,
 = *T. rotundifolia* (Hochst.) Gilg)

Tree, 3–10 m high. Leaves circular or broadly obovate, 40–110 × 40–100 mm, digitately 5–7-nerved. Sepals and petals 4- or 5-merous. *Flowers white, green or greenish white; November to February.* In forest. *De Winter 9387.*

W S C N E

trinervis Harv.

Tree, up to 7 m high. Leaves elliptic or obovate, 25–50 × 15–25 mm, digitately 3(–5)-nerved. Sepals and petals 3-merous. *Flowers greenish; November.* In forest and scrub-forest. *Pott 15212.*

W S C N E

Xylotheca Hochst. (s. Afr.: 1 sp.) 5284010
 Killick. 1976. F.S.A. 22: 58–60.

kraussiana Hochst.

(= *Oncoba kraussiana* (Hochst.) Planch.)

Tree or shrub, up to 10 m high. Leaves elliptic to broadly elliptic or obovate, 40–120 mm long, with entire margins and submarginal vein. *Large showy flowers; white; October and April.* Forest margins. *Van Wyk 4577.*

W S C N E

FUMARIACEAE

Soft herbs. Branches erect to sprawling. Leaves alternate, much divided to pinnate. Flowers small, bisexual, usually in dense axillary and terminal racemes. Sepals 2, often scale-like. Petals 4, ± connivent, 2 outer often saccate or spurred at base, 2 inner narrower and sometimes coherent at apex. Stamens 4, free and opposite petals. Ovary superior, 1-locular. Fruit capsular or a nut.

Key after Dyer, Gen. 1: 167 (1975).

Fruit a lanceolate, compressed capsule *Cysticapnos*
 Fruit a small, ± globose, turgid nut *Fumaria*

Cysticapnos Mill. (s. Afr.: 5 spp.) 2858020
 Lidén. 1986. Opera Bot. 88: 105–108.

pruinosa (Bernh.) Lidén
 (= *Phacocapnos pruinosa* (E. Mey.) Bernh.)

Climbing herb. Leaves glaucous, bitripinnate, deeply lobed. Uppermost petal with magenta base internally. Capsule pod-shaped, compressed. *Flowers pink; November to January.* Scrub. *Devenish 513.*

W S C N E

Fumaria L. (s. Afr.: 1 sp.) 2861000
 Henderson & Anderson. 1966. Common weeds in South Africa: 148–149.

muralis Sond. ex W. Koch subsp. **muralis***
 (= *F. officinalis* L. var. *capensis* Harv.)

Erect to sprawling, herbaceous annual, up to 0.6 m high. Leaves petiolate, bipinnate, pinnae deeply lobed. Corolla ± 10 mm long, produced into a spur. *Flowers pink with purple tips; July to October.* Weed in cultivated lands. Native to Europe. *Nelson sub TRV 11622.*

W S C N E

GENTIANACEAE

Herbs. Leaves alternate, opposite or in a basal rosette, often united at base or connected by transverse line. Flowers regular. Petals 4 or 5, united, often twisted in bud. Stamens as many as petals and arising from them. Ovary superior, 1-locular. Fruit a capsule.

Key after Dyer, Gen. 1: 456 (1975).

- 1a Ovary 2-locular through intrusion of locular wall 2
- 1b Ovary 1-locular with parietal placentation 3
- 2a Flowers mainly blue, rarely pink or white; corolla tube short, broadly cylindrical; anthers coriaceous *Exacum*
- 2b Flowers mainly yellow, sometimes cream or white; corolla tube cylindrical or funnel-shaped; anthers membranous *Sebaea*
- 3a Corolla lobes with fringed nectaries near their base; flowers in lax cymes *Swertia*
- 3b Corolla lobes without nectaries 4
- 4a Flowers sessile or subsessile in clusters in axil of each bract *Enicostema*
- 4b Flowers in terminal, simple or compound cymes; calyx keeled; plants glabrous *Chironia*

Chironia L. (s. Afr.: 16 spp.)

6503000

Marais & Verdoorn. 1963. F.S.A. 26: 212–236.

krebsii Griseb.

Herb, 0.4–0.7 m high. Basal leaves long and persistent, up to 300 mm long; cauline none or reduced and in 1–3 distant pairs. Inflorescence thyrsoid, usually narrowly oblong in outline; flowers fastigiate. Style 2-lobed at apex. Fruits ± pointed. *Flowers red-purple, pink, red (occasionally white); September to March.* Marshy ground usually at high altitudes. *Codd 8164.*

W S C N E

palustris Burch. subsp. palustris

(= *C. palustris* Burch.)

Herb, 0.3–0.6 m high. Basal leaves in a rosette, persistent, the cauline much reduced and usually in 1–3 pairs. Inflorescence of open 2- or 3-flowered cymes, not fastigiate. Calyx ± as long as corolla tube. Anthers strongly twisted. Style 2-lobed. Fruits ± pointed. *Flowers pink, occasionally bleached white; November to July.* Marshy, usually turfy ground or near water. *Verdoorn 2435.*

W S C N E

palustris Burch. subsp. transvaalensis (Gilg) I. Verd.

(= *C. transvaalensis* Gilg)

Herb, 0.7 m high. Basal leaves usually not persistent. Cauline leaves well developed, up to 7 mm broad, glaucous. Inflorescence of open 2- or 3-flowered cymes, not fastigiate. Calyx ± as long as corolla tube. Anthers slightly twisted. Style 2-lobed. Fruits ± pointed. *Flowers shorter than 25 mm, pink, occasionally bleached white; October to June.* Marshy places usually at the water's edge, on banks of streams, dams and rivers. *Verdoorn 2436.*

W S C N E

purpurascens (E. Mey.) Benth. & Hook. f. subsp. humilis (Gilg) I. Verd.

(= *C. humilis* Gilg)

Biennial or perennial herb, 200–500 mm tall. Inflorescence of open 2- or 3-flowered cymes, not fastigiate,

central flower in each cyme subsessile or with pedicel up to 6 mm long; flowers 10–20 mm long. Calyx longer than corolla tube, calyx lobes and bracts attenuate into a long point. Style 2-lobed. Fruits pointed. *Flowers deep magenta-pink; October to June.* Damp or marshy places on mountain tops, hillsides, low-lying ground, old lands, vleis and dongas. *Dyer 4157.*

W S C N E

Enicostema Blume (s. Afr.: 1 sp.)

6484000

Marais & Verdoorn. 1963. F.S.A. 26: 238.

hyssopifolium (Willd.) I. Verd.

(= *E. littorale* Blume,

= *Exacum hyssopifolium* Willd.)

Perennial herb, 50–300 mm tall. Leaves sessile, longer than internodes; narrowly to broadly linear, 3-nerved from base. Flowers small; in verticillate inflorescence. Double hood at base of filaments. *Flowers white, drying yellowish; September to May.* In grass on sandy slopes, in turfy hollows, in denuded veld, at roadsides or along rivers. *Codd 8321.*

W S C N E

Exacum L. (s. Afr.: 1 sp.)

6479000

Marais & Verdoorn. 1963. F.S.A. 26: 211–212.

quinquenervium Griseb.

Annual herb, 0.1–0.6 m high. Stems 4-ridged. Leaves narrowly elliptic to elliptic, 3–5-nerved. Calyx lobes with green, veined wing. Corolla tube short, broad; thick, parchment-like anthers. *Flowers blue, turning yellow when dry; February to May.* In moist ground on stream and riverbanks. *Scheepers 1134.*

W S C N E

Sebaea Sol. ex R. Br. (s. Afr.: 45 spp.)

6481000

Marais & Verdoorn. 1963. F.S.A. 26: 177–210.

bojeri Griseb.(= *S. saccata* Schinz)

Annual herb, 50–200 mm tall. Leaves reduced, 10 × 3 mm. Filaments inserted in corolla sinuses. Anthers with very small sessile apical gland or sometimes apparently eglandular. Style without stigmatic swelling or with large swelling below middle. *Flowers yellow; February to May.* Grassland. *Galpin 14296.*

W S C N E

erosa Schinz(= *S. pygmaea* Schinz)

Annual or biennial herb, 50–150 mm tall. Leaves ovate-orbicular to ovate-lanceolate, 10 × 10 mm. Calyx segments keeled or very narrowly winged. Filaments inserted 0.5–1.0 mm below corolla sinuses. Style 2.5–6.0 mm long, with small stigmatic swelling, usually below, but sometimes above middle. *Flowers yellow; October to July.* Marshy areas in grassland. *Esterhuyzen 21465.*

W S C N E

exigua (Oliv.) Schinz

Annual or biennial herb, up to 200 mm tall. Leaves 12 × 1.0–1.5 mm. Filaments inserted in corolla sinuses. Anthers with minute apical gland. Style with small stigmatic swelling near base. Calyx keeled or very narrowly winged, joined for 2–4 mm at base. *Flowers yellow or pale yellow; October and February to June.* Grassland. *Acoks 12581.*

W S C N E

filiformis Schinz

Annual herb, 40–150 mm tall. Filaments inserted in corolla sinuses. Anthers with stipitate apical gland. Style with large stigmatic swelling below middle. Calyx keeled or very narrowly winged, joined for up to 1 mm at base. *Flowers yellow or pale yellow; August and February to April.* Grassland. *Galpin 14398.*

W S C N E

grandis (E. Mey.) Steud.(= *Belmontia grandis* E. Mey.,= *Exochaenium grande* (E. Mey.) Griseb.)

Annual or biennial herb, up to 350 mm tall. Calyx 19–25 mm long, winged. Corolla tube 10–23 mm long. Filaments inserted below corolla sinuses. Anthers with large apical gland. Style without stigmatic swelling. Stigma clavate or linear-oblong, 2.25–5.00 mm long. *Flowers white, cream, yellow or salmon pink; October to June.* In open grassland or moist situations. *Codd 3939.*

W S C N E

junodii Schinz

Annual herb, 35–200 mm tall. Leaves 1–5 mm long. Filaments 0.75–2.25 mm long, inserted in corolla sinuses. Anthers 0.75–1.25 mm long, with small stipitate apical gland. Style without stigmatic swelling. Stigma much shorter than style. *Flowers yellow or lemon; January to April.* Under trees or shrubs in rich mould or in humus-pockets among rocks. *Acoks 16673.*

W S C N E

leiostyla Gilg(= *S. polyantha* Gilg)

Annual or perennial herb, up to 1 m high. Inflorescence and cymes dense. Filaments inserted in corolla sinuses. Anthers with small apical gland and sometimes 2 minute basal glands. Style with stigmatic swelling below middle or near base. *Flowers yellow or rich yellow; July to June.* Grassland. *Meeuse 9871.*

W S C N E

longicaulis Schinz(= *S. acuminata* A.W. Hill,= *S. grandiflora* Schinz)

Perennial or biennial herb, up to 0.6 m high. Leaves ovate, ovate-orbicular to suborbicular-reniform. Filaments inserted in corolla sinuses. Anthers with small apical and sometimes 2 minute basal glands. Style without stigmatic swelling or with swelling near base. *Flowers yellow; February to April.* Very wet places, marsh plants. *Strey 3017.*

W S C N E

macrophylla Gilg(= *S. brehmeri* Schinz,= *S. fastigiata* A.W. Hill)

Perennial herb, up to 0.75 m high. Calyx very wide, markedly 5-angled. Filaments inserted in corolla sinuses. Anthers with small to big apical gland and 2 smaller basal glands. Style with small to large stigmatic swelling below middle. *Flowers yellow; February to July.* Moist situations. *Codd 4311.*

W S C N E

natalensis Schinz(= *S. imbricata* A.W. Hill,= *S. rudolfii* Schinz)

Herb, up to 250 mm tall. Inflorescence densely corymbose. Calyx winged; wing 0.75–1.50 mm broad. Filaments inserted in or up to 1 mm below corolla sinuses. Anthers with small apical and sometimes 2 minute basal glands. Style with large swelling below middle. *Flowers yellow; January.* Grassland. *Galpin 9836.*

W S C N E

pentandra E. Mey. var. **pentandra**(= *S. pentandra* E. Mey.,= *S. primulina* A.W. Hill)

Annual herb, 50–300 mm tall. Filaments up to 2.5 mm long, inserted in or below corolla sinuses. Anthers with 3 glands. Style with small to large swelling below middle. *Flowers yellow; August to September.* Damp situations, along dry watercourses; in low-lying ground. *Van Wyk 578.*

W S C N E

pentandra E. Mey. var. **burchellii** (Gilg) Marais(= *S. burchellii* Gilg,= *S. conrathii* Schinz)

Annual herb, 50–300 mm tall. Filaments up to 0.5 mm long; inserted in corolla sinuses. Anthers with conspicuous apical and 2 small basal glands. Style without swelling or with swelling above middle. *Flowers yellow; September to December and in March.* Damp

situations, along dry watercourses, low-lying ground. *Kinges 1502.*

W S C N E

rehmannii Schinz

(= *S. macrantha* Gilg)

Annual or biennial herb, up to 0,65 m high. Inflorescence lax with long branches. Calyx segments winged. Filaments inserted in or shortly below corolla sinuses. Anthers with small apical gland or occasionally eglandular. Style with stigmatic swelling below middle. *Flowers yellow; January to May and August to September.* Mountain grassland. *Prosser 1922.*

W S C N E

repens Schinz

Mat-forming perennial herb. Filaments inserted in corolla sinuses. Anthers with small yellow or big orange apical gland. Style with swelling below middle. *Flowers yellow; July and October to November.* Moist, high altitude situations. *Acocks 11527.*

W S C N E

sedoides Gilg var. sedoides

(= *S. sedoides* Gilg p.p.)

Perennial herb, up to 0,65 m high. Inflorescence paniculate-corymbose. Filaments inserted in corolla sinuses. Anthers with small or medium stipitate apical gland. Style with swelling below middle. *Flowers yellow, butter yellow or white; December to March.* Grassland. *Onderstall 1200.*

W S C N E

sedoides Gilg var. confertiflora (Schinz) Marais

(= *S. confertiflora* Schinz)

Perennial herb, up to 0,65 m high. Inflorescence densely corymbose and head-like. Filaments inserted in corolla sinuses. Anthers with small or medium, stipitate apical gland. Style with swelling below middle.

Flowers yellow, butter-yellow or white; December to April. Grassland. *Galpin 14405.*

W S C N E

sedoides Gilg var. schoenlandii (Schinz) Marais

(= *S. schoenlandii* Schinz,
= *S. sedoides* Gilg p.p.)

Perennial herb, up to 0,65 m high. Inflorescence densely corymbose and head-like. Filaments inserted below corolla sinuses. Anthers with small or medium stipitate apical gland. Style with swelling below middle. *Flowers yellow, butter-yellow or white; January to March.* Marshy areas in grassland. *Devenish 811.*

W S C N E

thomasii (S. Moore) Schinz

(= *Exochaeium thomasii* (S. Moore) Schinz,
= *S. jasminiflora* Schinz)

Procumbent, mat-forming perennial herb. Corolla tube over 12 mm long. Filaments inserted below corolla sinuses. Anthers with an oblong-conical, dark (red-brown) apical gland. Style without stigmatic swelling. *Flowers bright yellow; August.* Moist situations on high mountain ranges. *Devenish 39.*

W S C N E

Swertia L. (s. Afr.: 1 sp.)

6512000

Marais & Verdoorn. 1963. F.S.A. 26: 240–241.

welwitschii Engl.

Annual or perennial herb, 180–230 mm tall. Leaves 3-nerved from base, undersurface ± reticulate, margins strongly revolute. Corolla lobes with a pair of fimbriate nectaries near base within. *Flowers white, sometimes with purple lines inside; November and February to April.* Marshy or damp ground on mountain plateaux, in valleys, vleis or along rivers. *Codd 5171.*

W S C N E

GERANIACEAE

Herbs or shrublets, often aromatic. Leaves alternate or in a basal rosette, often pinnately or palmately lobed with stipules. Flowers slightly irregular or regular. Petals 5, free. Stamens 10–15, free or ± fused at base. Ovary superior; style with 3–5 lobes. Fruit dry, carpels with long persistent styles splitting off elastically at base of central axis.

Key after Dyer, Gen. 1: 277 (1975).

- 1a Flowers irregular; stamens 10, usually only 2–7 with anthers **Pelargonium**
- 1b Flowers regular or very nearly so; stamens 5–15, all perfect or alternate ones without anthers. 2
- 2a Stamens 10 **Geranium**
- 2b Stamens 15 **Monsonia**

Geranium L. (s. Afr.: 31 spp.)

3924000

Hilliard & Burt. 1985. Notes R. bot. Gdn Edinb. 42,2: 171–225.

multisetum N.E. Br.

(= *G. incanum* Burm. f. var. *glabrius* R. Knuth,
= *G. incanum* Burm. f. var. *purpureum* Burt Davy)

Clumped perennial herb, up to 150 mm tall, with tufts of radical leaves. Leaf lobes twice-pinnate. *Flowers*

violet, purple or magenta; November to January. Open marshy places. *Leistner 523.*

W S C N E

nyassense R. Knuth

(= *G. incanum* Burm. f. subsp. *nyassense* (R. Knuth) J.R. Laundon)

Diffuse perennial herb. Lower leaf surface finely appressed pubescent with coarser hairs over veins and sometimes also with long spreading hairs. Petals 9–12 mm long. *Flowers white or pink; December to June.* In grass near streams and along damp forest margins. *Smuts & Gillett 3282.*

W S C N E

robustum Kuntze

(= *G. incanum* Burm. f. var. *pottiae* Burt Davy)

Robust subshrub, up to 1 m high. Leaves silvery, primary leaf lobes irregularly lobed and toothed. *Flowers light purple; November to March.* Streamsides and moist, shrub-covered mountainsides. *Bredenkamp 409.*

W S C N E

schlechteri R. Knuth

(= *G. ornithopodon* Eckl. & Zeyh. var. *lilacinum* Kuntze)

Diffuse perennial herb. Stems straggling. Stipules deeply divided into several linear-acuminate segments. Petioles with fine, long, gland-tipped hairs. Flowers not forming terminal compound inflorescence. *Flowers white, fading to pink or white with pink or rosy pink venation; December to April.* Moist grassland, sometimes in shelter of rocks. *Van Dam 24330.*

W S C N E

wakkerstroomianum R. Knuth

(= *G. ornithopodon* Eckl. & Zeyh. var. *album* Kuntze)

Diffuse perennial herb, up to 300 mm tall. Median primary leaf lobe shallowly to deeply cut, but not to base of leaf. Petals narrow and deeply notched. *Flowers white with pink or red venation; July to April.* Mountainsides, forest margins, in damp sheltered or marshy, grassy places. *Kluge 68.*

W S C N E

Monsonia L. (s. Afr.: 21 spp.) 3925000

Venter. 1979. *Belmontia* 10,52: 1–128.

angustifolia E. Mey. ex A. Rich.

Annual herb, up to 500 mm tall. Leaf margin serrate and sinuate; leaflets gradually narrowing into petiole. Petals 6–13 × 3–6 mm, 1.0–1.5 times as long as sepals. *Flowers white, mauve, pink, blue, purplish or rarely yellow, venation dark blue or greyish; November to February.* Grassland. *Germishuizen 1374.*

W S C N E

attenuata Harv.

(= *M. belfastensis* R. Knuth)

Erect, single- or few-stemmed perennial herb, up to 500 mm tall. All leaves alternate, becoming crowded to

almost whorled at stem apices, blade linear, apex acute or acuminate. Petals with venation conspicuously reticulate. *Flowers white to yellow, venation greyish blue to green or blackish; December to March.* Mountainsides or rocky ridges. *Codd 8271.*

W S C N E

brevirostrata R. Knuth

Prostrate to decumbent, many-stemmed annual herb, up to 300 mm tall. Leaf blade glabrous above. Petiole 1.0–2.5 times as long as blade. Sepals shorter than 5 mm. Fruit beak shorter than 25 mm. *Flowers white, mauve, blue or purplish blue, venation dark blue or purplish; December to March.* Rocky, turf or sandy grassland and on bare ground in mountainous habitats. *Turner 1561.*

W S C N E

burkeana Planch. ex Harv.

(= *M. glandulosissima* Schinz,
= *M. malvaeflora* Schinz)

Erect or semi-erect perennial herb, up to 400 mm tall. Stems with long hairs scattered or absent, with stalked glands. Leaf blade on both sides and also on veins curved pubescent, but never with double indumentum of long and short hairs. *Flowers white, pink, mauve or purplish blue, venation purplish grey; September to February.* Grassland. *Van Rooyen 2073.*

W S C N E

glauca R. Knuth

(= *M. ovata* Cav. subsp. *glauca* (R. Knuth) L.F. Bowden & T. Müll.,
= *M. stricta* R. Knuth)

Erect, decumbent or prostrate, few- to many-stemmed perennial herb, up to 450 mm tall. Leaf margin mostly with globular pockets of powdery granules in teeth or at their bases. Petals withering yellow. Mericarps narrowly obconical. *Flowers white, cream or yellow; November to April.* Moist bushveld or scrubby grassland. *Zambatis 1053.*

W S C N E

lanuginosa R. Knuth

Erect, single- to few-stemmed perennial herb, up to 300 mm high. Stems with double indumentum, the first lanuginose and the second consisting of scattered, long gland-based hairs with numerous stalked and sessile glands. Leaves narrowly elliptic, apex obtuse and 3- or 5-toothed. *Flowers mauve, venation purplish; November to April.* Montane *Protea* savanna or grassland. *Venter 9401.*

W S C N E

senegalensis Guill. & Perr.

Prostrate or decumbent, multistemmed annual herb, up to 300 mm tall. Main stem stunted with leaves rosulate and lateral branches prostrate or decumbent. Petals narrowly obtriangular or obtriangular. *Flowers pink to deep pink; January to March.* Grassland and woodland, granite soils of hills and mountains. *Bruce 65.*

W S C N E

transvaalensis R. Knuth

Erect or decumbent, few-stemmed perennial herb, up to 300 mm tall. Leaf margin entire in basal half and serrate in apical half with 3 main veins. Petals usually auriculate at base and often dentate at apex. *Flowers pink or mauve, yellow at base, veins purplish; November to March.* Mountain grassland. *Onderstall 1304.*

W	S	C	N	E
---	---	---	---	---

Pelargonium L'Hér. (s. Afr.: 218 spp.) 3928000

Van der Walt & Ward-Hilhorst. 1977. *Pelargoniums* of southern Africa.
Van der Walt *et al.* 1981. *Pelargoniums* of southern Africa 2.

Van der Walt & Vorster. 1988. *Pelargoniums* of southern Africa 3.

acraeum R.A. Dyer

Weakly branched, rather scandent, evergreen subshrub, up to 1 m high (rarely 2 m). Stems herbaceous to somewhat succulent. Leaves simple, kidney-shaped to circular, deeply lobed, covered with short velvety hairs. *Flowers pink; March to December.* Mountainsides in direct sunlight or partial shade. *Stalmans 1727.*

W	S	C	N	E
---	---	---	---	---

album J.J.A. van der Walt

Evergreen subshrub, up to 400 mm when in flower. Leaves crowded, rosulate, viscous, margins dentate, laminae cordate with 5–7 palmately incised lobes. *Flowers white, sometimes with pink feather-like markings on the 2 posterior petals; May to November.* Humus-rich soils in shady crevices on dolomite hills. *Van der Walt & Vorster 1344.*

W	S	C	N	E
---	---	---	---	---

alchemilloides (L.) L'Hér.

(= *P. malvaefolium* Jacq.)

Decumbent perennial herb with straggling stems up to 200 mm tall (sometimes 500–600 mm). Leaves palmately lobed, silky. Stipules broadly ovate. *Flowers white to deep pink; July to June.* Usually found in disturbed areas. *Raal 1077.*

W	S	C	N	E
---	---	---	---	---

dispar N.E. Br.

Trailing herb, usually annual, with stolons. Leaves simple, cordate, sometimes with 3–5 shallowly incised lobes, margin lobed to cleft. *Flowers white or pink, venation purple; January to February.* Mountainsides, among grass. *Kluge 2484.*

W	S	C	N	E
---	---	---	---	---

dolomiticum R. Knuth

(= *P. bechuanicum* Burtt Davy,
= *P. juttiae* Dinter)

Much-branched, herbaceous perennial subshrub, up to 500 mm tall when in flower. Leaves irregularly bipinnate, glaucous. Petals 4, claw of spatulate petals folded lengthwise so that they appear tubular. *Flowers cream-coloured to pink; August to May.* Deep, well

drained sandy soils (dolomite), usually in direct sunlight. *Retief & Herman 146.*

W	S	C	N	E
---	---	---	---	---

glutinosum (Jacq.) L'Hér.

(= *Geranium viscosum* Scop.,
= *P. erectum* R. Knuth)

Erect, much-branched shrub, up to 1.8 m high. Leaves palmately or pinnately incised, sticky and strongly balm-scented. *Flowers pale to dark pink, posterior petals with dark pink-purple markings; September to November.* Mountain regions, well drained soils, moist places or close to water. *Venter 12739.*

W	S	C	N	E
---	---	---	---	---

graveolens L'Hér.

(= *P. intermedium* R. Knuth,
= *P. terebinthiaceum* (Cav.) Desf.)

Erect, much-branched shrub, up to 1.3 m high. Leaves palmately to pinnately incised, soft to the touch, strongly rose-scented. *Flowers white to pinkish, posterior petals with wine-red feather-like markings; August to January.* Mountainsides, moist places, in semishade. *Codd 4809.*

W	S	C	N	E
---	---	---	---	---

luridum (Andr.) Sweet

(= *P. aconitophyllum* (Eckl. & Zeyh.) Steud.,
= *P. flabellifolium* Harv.)

Acaulescent geophyte with woody tuber, up to 1 m high. Leaves extremely polymorphous. Scape long. Flowers large, of variable colour, even on a single petal. *Flowers varying from white to pink, yellow to greenish yellow; September to April.* Grassland, damp places. *Onderstall 984.*

W	S	C	N	E
---	---	---	---	---

minimum (Cav.) Willd.

(= *P. capnoides* L'Hér.,
= *P. fumarioides* L'Hér. ex Harv.)

Prostrate, spreading herb, up to 100 mm tall with deep, tuberous, long-lived underground parts. Leaves either pinnately compound with leaflets deeply cleft into narrow segments, or simple but deeply cleft into narrow segments. Hypanthium poorly developed and mostly shorter than pedicel. Petals as long as sepals. *Flowers white (rarely pink); October to March.* Open sunny places on hard stony grounds. *Turner 1113.*

W	S	C	N	E
---	---	---	---	---

multicaule Jacq. subsp. **subherbaceum** (R. Knuth)

J.J.A. van der Walt
(= *P. subherbaceum* R. Knuth)

Low-growing, much-branched subshrub, up to 300 mm tall. Stems herbaceous, angular, trailing. Leaves irregularly pinnately or bipinnately incised, glabrous. Petals 4, the 2 posterior petals much larger than the 2 anterior ones. *Flowers pinkish purple; October to December.* Mountainous or rocky places, well-drained soils. *Scheepers 1074.*

W	S	C	N	E
---	---	---	---	---

nelsonii Burt Davy

Prostrate, spreading herb, up to 100 mm tall. Inflorescence with an open appearance. Hypanthium well developed. Petals well exceeding sepals. *Flowers light pink with dark pink markings; October to November. Dry, stony ridges. Hanekom 1877.*

W	S	C	N	E
---	---	---	---	---

pseudofumarioides R. Knuth

Prostrate, spreading herb. Inflorescence with somewhat capitate appearance due to large number of flowers. Hypanthium well developed. Petals exceeding sepals. *Flowers white or light pink, posterior petals with maroon markings; November to February. Cool, moist, grassy highlands. Henrici 175.*

W	S	C	N	E
---	---	---	---	---

sidoides DC.

(= *P. sidaefolium* (Thunb.) R. Knuth)

Rosulate subshrub, up to 500 mm tall when in flower. Leaves velvety. Inflorescence a branched system of 2–4 pseudo-umbels. Pedicel short, hypanthium long. *Flowers very dark reddish purple (black); July to June. Short grassland, stony soil. Rautenbach sub PRE 721805.*

W	S	C	N	E
---	---	---	---	---

transvaalense R. Knuth

Herbaceous, low-growing subshrub, up to 0,8 m high. Leaves simple, palmatilobate to palmatipartite, hairy, sometimes zoned. Flowers relatively large, with 5 petals. *Flowers pink, venation carmine-red; August to March. Shady, moist places in ravine forest. Germishuizen 3233.*

W	S	C	N	E
---	---	---	---	---

GESNERIACEAE

Herbs of moist, usually shady places. Leaves opposite, sometimes 1 only, often basal, without stipules. Flowers irregular, 2-lipped. Petals 5, fused into basal tube. Stamens (2)4, two of which are longer than the others, attached to petals; anthers coherent (but not fused) in pairs. Ovary superior, 1-locular. Fruit a capsule, sometimes spirally twisted, with many seeds.

Streptocarpus Lindl. (s. Afr.: 45 spp.) 7823000

Hilliard & Burt. 1971. *Streptocarpus*: 1–410.
Edwards *et al.* 1992. *Bothalia* 22,2: 192–194.

caeruleus Hilliard & B.L. Burt

Rosulate perennial herb. Leaves 2–4(–6). Inflorescence 4–8(–12)-flowered, seemingly arising in lateral pairs. Peduncle 60–100(–200) mm long. Calyx segments 2,5–5,0 mm long. Corolla up to 18 mm long, tube widening from base to apex. Fruits up to 50 mm long, held erect. *Flowers violet-blue (rarely magenta) with 2 yellow spots or short bars within throat; December to April. Under cliffs on rocks near streams, mountain tops. Meeuse 10310.*

W	S	C	N	E
---	---	---	---	---

confusus Hilliard subsp. **confusus**

Unifoliate monocarpic herb. Leaf 300 × 170 mm. Calyx divided to base into 5 linear segments. Corolla ± 20–25 mm long; mouth strongly compressed from the sides; tube subcylindric, abruptly deflexed then directed forwards. Capsules 45–90 mm long. *Flowers pale violet to whitish; October to April. In forest or on walls of kloofs and cliff faces shaded by shrubs and trees. Burt & Scheepers 2930.*

W	S	C	N	E
---	---	---	---	---

cyaneus S. Moore

(= *S. junodii* P. Beauv.,
= *S. polackii* B.L. Burt)

Rosulate perennial herb, with more than 1 leaf. Inflorescence often with only 1 or 2 flowers but up to 6 not uncommon. Corolla (25–)35–50(–75) mm long, widening from base to apex. Capsule 45–110 mm long.

Flowers with lobes violet or rose-pink, occasionally white, floor of tube with median yellow stripe, flanked by deep violet or reddish violet streaks; October to May. Rock crevices or sometimes epiphytic. Retief & Herman 50.

W	S	C	N	E
---	---	---	---	---

decipiens Hilliard & B.L. Burt

Small, erect, caulescent annual herb, up to 50 mm tall. Leaves opposite or subopposite. Inflorescence in axils of cauline leaves. Corolla 3–4 mm long, tube swollen at base. Capsule 4–5 mm long. *Flowers white with 5–7 reddish stripes on floor of tube; April. Deep under shallow overhangs of sandstone outcrops on grass slopes. Thompson PRE 30496.*

W	S	C	N	E
---	---	---	---	---

denticulatus Turrill

Unifoliate monocarpic herb. Leaf almost glabrous. Corolla 20 mm long, tube bulbous at base, narrowed towards middle and strongly curved downwards, then directed forwards. Capsule 18–28 mm long. *Flowers pale violet to pinkish red, base of lower lip whitish, floor of tube greenish, spotted crimson and with crimson streaks; December to April. Rock outcrops in shady cracks and overhangs. Louw 20.*

W	S	C	N	E
---	---	---	---	---

dunnii Hook. f.

(= *S. armitagei* Baker f. & S. Moore)

Monocarpic or perennial herb. Leaves 1 or more, epidermis, particularly lower leaf surface, spattered with red pigment granules. Corolla 50 mm long, tube wid-

ening gradually upwards, arcuate. Capsules 25–30 mm long. *Flowers pink to reddish outside, pinkish inside, floor white striped red; October to March.* Rock crevices or overhangs on mountainsides. *Drews 204.*

W S C N E

fasciatus T.J. Edwards & C. Kunhardt

Rosulate perennial herb. Inflorescence up to 12-flowered. Corolla 70–76 mm long, tube 50 mm long, lower half linear, upper half expanding and slightly dorsiventrally compressed. Fruit 100–120 mm long. *Flowers with lobes violet-streaked.* Woodland. *Kunhardt & Kluge s.n.* (not seen).

W S C N E

galpinii Hook. f.

Monocarpic or perennial herb. Leaves 1 or more. Corolla 13–30 mm long, tube cylindric at base becoming abruptly campanulate upwards. Capsule 11–24 mm long. *Flowers violet with white blotch along floor of tube; sometimes bright yellow near insertion of stamens; November to May.* Around edges of rock sheets and in crevices and under overhangs of rock outcrops on hillsides and mountain tops. *Galpin 13743.*

W S C N E

grandis N.E. Br. subsp. **grandis**

(= *S. tubiflos* C.B. Clarke p.p.)

Monocarpic herb. Leaf 1. Corolla 25–45 mm long, tube subcylindric to narrowly funnel-shaped, straight or slightly bent. Capsule 65–111 mm long. *Flowers white to violet, marked with white wedges or yellow stripe on floor of tube; January.* Steep walls of kloofs in dense shade. *Louw 32.*

W S C N E

latens Hilliard & B.L. Burt

Perennial herb, with 1–5 leaves loosely associated in a tuft, the flowering ones with conspicuous petiolode. Corolla 16–22 mm long, tube subcylindric, with the same diameter throughout. Capsule 11–15 mm long. *Flowers white with 2 violet streaks on lower lip and yellow stripe, spotted violet-brown; November to December and in April.* Rock crevices, cracks, deep holes on rock outcrops. *Galpin 13027.*

W S C N E

longiflorus (Hilliard & B.L. Burt) T.J. Edwards

(= *S. caeruleus* Hilliard & B.L. Burt subsp. *longiflorus* Hilliard & B.L. Burt)

Rosulate perennial herb, with up to 10 leaves. Inflorescence 4–20-flowered. Peduncle 140–170 mm long. Calyx segments 5 mm long. Corolla up to 50 mm long, tube widening from base to apex. Fruits 90–100 mm long, pendulous. *Flowers blue with bright yellow bar in tube forking near mouth into 2 lines running towards sinuses of centre lobe; October and January to March.* Shade of rocks, high up in mountains. *Van der Schijff 5443.*

W S C N E

meyeri B.L. Burt

(= *S. parviflorus* C.B. Clarke)

Rosulate perennial herb. Leaves 3–10. Corolla 20–30 mm long, tube cylindric, straight, with $\pm$ same diameter throughout. Capsule 17–40 mm long. *Flowers pale violet outside, deeper violet inside or violet above, whitish below, heavily streaked and spotted violet; floor striped yellow; November to January.* Walls of deep rock fissures on mountain summit or low rock cliffs. *Kluge 2026.*

W S C N E

micranthus C.B. Clarke

Monocarpic unifoliate herb, all parts sparsely pilose. Corolla 6 mm long, tube as broad as long. Capsule 11–20 mm long. *Flowers white, sometimes tinged pale green at base of tube; December to April.* Mossy rocks and damp banks in forest, mossy mist-swept crevices of rock outcrops along upper limits of forested escarpments and mountains. *Vorster 277a.*

W S C N E

parviflorus Hook. f.

(= *S. luteus* C.B. Clarke p.p.)

Rosulate perennial herb. Leaves numerous. Inflorescence up to 20-flowered. Corolla 20–30 mm long, tube widening from base to apex. Capsule 37–61 mm long. *Flowers white, sometimes suffused palest violet, with yellow stripe on floor of tube and 3–7 violet streaks extending to lower lip; November to March.* Damp banks and rock faces in forest or in rock crevices. *Gerstner 5856.*

W S C N E

pentherianus Fritsch

Perennial herb. Leaves 1–3. Corolla $\pm$ 18 mm long, tube subcylindric, abruptly deflexed then directed forwards, mouth strongly compressed from the sides. Capsule 9–20 mm long, usually strongly deflexed. *Flowers white, tube sometimes suffused violet, pale yellow in throat; September to February.* In shelter of rock outcrops, in grassland; sometimes margins of forest patches. *Devenish 1500.*

W S C N E

pogonites Hilliard & B.L. Burt

Perennial herb, with up to 5 leaves in a rosette. Corolla 9–10 mm long, tube cylindric, $\pm$ the same diameter throughout, bent downwards and forwards. Capsule $\pm$ 6 mm long. *Flowers white outside, sometimes tinted violet at base, white inside with $\pm$ 10 reddish violet stripes on floor of tube; December.* In crevices of bare rock, sometimes sheltered and shaded cracks. *Hilliard 2953.*

W S C N E

pole-evansii I. Verd.

Rosulate perennial herb. Leaves up to 6, epidermis, particularly lower leaf surface, spattered with red pigment granules. Corolla $\pm$ 17 mm long, tube bulbous at base, narrowing towards middle and strongly curved

downwards then projected forwards. Capsule 6–14 mm long. *Flowers deep reddish violet, lobes pale violet; December to February.* Shady crevices of granite boulders in bushveld. *Van der Schijff 198.*

W S C N E

polyanthus Hook. subsp. **comptonii** (Mansf.) Hilliard
(= *S. comptonii* Mansf.)

Monocarpic or perennial herb. Leaves 1 or 2, small. Inflorescence slender, lax, up to 16-flowered. Corolla limb narrower than 10 mm, upper lobes not strongly reflexed, tube cylindric, sharply deflexed then directed forwards, mouth laterally compressed. Capsule 25–43 mm long. *Flowers pale violet, or white with tube faintly flushed violet; January to March.* On quartzite rocks. *Louw 25.*

W S C N E

polyanthus Hook. subsp. **dracomontanus** Hilliard

Perennial herb. Leaves 2 or 3. Inflorescence short and relatively stout, few-flowered. Corolla limb narrower than 20 mm, the rest as in subsp. *comptonii*. Capsule 16–40 mm long. *Flowers pale violet, white, greenish or yellow in throat; December.* Rock outcrops. *Jacobson 1444.*

W S C N E

pusillus Harv. ex C.B. Clarke

Monocarpic herb. Leaves 1–3. Inflorescence many-flowered. Corolla 18 mm long, tube cylindric, slightly curved. Capsule 15–25 mm long. *Flowers white; January.* Damp crevices of sandstone cliffs, also banks and mossy rocks of kloof forest. *Onderstall 311.*

W S C N E

rimicola Story

Monocarpic herb, with 1 leaf, sometimes 2. Corolla 10–12 mm long, tube cylindric, ± the same diameter throughout, bulbous at base, curved slightly downwards and upwards. Capsule 7–11 mm long. *Flowers white; December and March to May.* Under deep rock ledges on cliffs near summit of mountain. *Story 6517.*

W S C N E

vandeleurii Baker f. & S. Moore

Monocarpic herb. Leaf 1. Inflorescence ± 36-flowered. Corolla ± 55 mm long, tube cylindric below, funnel-shaped above, strongly curved downwards. Capsule ± 50 mm long. *Flowers white with pronounced yellow blotch at base of lower lip, sometimes patterned with 3 reddish violet linked v's in mouth of tube; November to April.* In crevices of rock outcrops or on walls of damp kloofs. *Codd 8231.*

W S C N E

wilmsii Engl.

(= *S. muddii* C.B. Clarke)

Monocarpic or sometimes perennial herb. Leaf 1, leaf base cordate to cuneate. Inflorescence up to 25-flowered. Corolla up to 38 mm long, tube subcylindric, straight. Capsule 50–90 mm long. *Flowers white, occasionally suffused palest blue-violet with yellow stripe, streaked and spotted violet-blue on floor of tube; November to April.* Forest floor usually on steeply sloping earth banks or epiphytic. *Louw 30.*

W S C N E

GREYIACEAE

Shrubs or trees with soft wood. Leaves alternate, petioled, simple, subrotund, crenate, lobed; petiole sheathing at base. Sepals 5. Petals 5. Disc cupular, crowned with 10 gland-like processes. Stamens 10, within disc, free. Ovary superior, deeply grooved, 1-locular. Fruit a capsule.

Greyia Hook. & Harv. (s. Afr.: 3 spp.) 4855000

Coates Palgrave. 1977. Trees of southern Africa: 547–548.

radlkoferi Szyzsl.

Shrub or small tree, up to 5 m high. Leaves stellate-appressed-pilose above, undersurface densely covered with white to yellowish woolly hairs. Petals spatulate, 15–20 × 6–10 mm. *Flowers scarlet; July to October.* Mountain forested gullies, streambanks, forest margins, rocks. *Hanekom 2324.*

W S C N E

sutherlandii Hook. & Harv.

Shrub or small tree, up to 7 m high. Leaves without hairs or minutely hairy, green above, paler below. Petals broadly oblong, thrice as long as calyx, up to 10 mm long. *Flowers red; August to October.* Mountainsides, crests of broken, rocky ridges. *Mohle 396.*

W S C N E

GUNNERACEAE

Herbs of moist places. Leaves simple, in a basal rosette, large and rounded, with long petioles, palmately veined. Inflorescence a tall, erect spike. Flowers small, unisexual or bisexual. Calyx (0)2 or 3. Petals (0)2. Stamens (0)2. Ovary inferior, 1-locular; styles 2. Fruit a small drupe.

Gunnera L. (s. Afr.: 1 sp.) 5836000

Dyer. 1975. Gen. 1: 412.
Mendes. 1978. F.Z. 4: 79–81.

perpensa L.

Rhizomatous herb, up to 1 m high. Leaves robust, lamina 40–130(–250) × 60–170(–380) mm, reniform

to subcircular, palmately nerved, margin irregularly dentate with glandular teeth; petiole 150–750 mm long. Spikes (5–)20–70(–100) mm long. *Flowers green to reddish; October to March.* In cold or cool, continually moist localities, mainly along upland streambanks. *Kluge 349.*

W	S	C	N	E
---	---	---	---	---

HALORAGACEAE

Aquatic plants, floating, or herbs in marshes, rooted. Leaves alternate, opposite or whorled, simple or with filiform segments. Flowers often minute and imperfect. Calyx (0–)2–4-lobed. Petals (0–)2–4, free, deciduous. Stamens (1)2–8. Ovary inferior, 1–4-locular. Fruit a nut.

Key after Mendes in F.Z. 4: 74 (1978).

Leaves sessile or shortly petiolate, alternate or opposite, entire or shallowly dentate; flowers in axillary fascicles; fruit an indehiscent nutlet **Laurembergia**
Leaves sessile, verticillate, pinnately nerved, submerged ones pinnately divided into filiform segments; flowers arranged in terminal spikes or solitary and axillary; fruit separating into 4 (or fewer) 1-seeded nutlets **Myriophyllum**

Laurembergia P.J. Bergius (s. Afr.: 1 sp.) 5833000

Obermeyer. 1973. Bothalia 11: 116–117.
Mendes. 1978. F.Z. 4: 74–77.

repens P.J. Bergius subsp. brachypoda (Hiern) Oberm. (= *L. tetrandra* (Schott) Kanitz subsp. *brachypoda* (Welw. ex Hiern) A. Raynal)

Semidecumbent or ± erect herb, 100–200 mm tall. Leaves opposite or alternate, sessile or shortly petiolate, slightly fleshy. Blades linear, linear-oblong or narrowly ovate, elliptic or obovate, entire or slightly to distinctly 1–4-toothed towards apex. *Flowers white or pink; September to March.* Grassy edges of swamps, sandy lake margins, on mud in grassland areas, moist pathsides. *Strey 7961.*

W	S	C	N	E
---	---	---	---	---

Myriophyllum L. (s. Afr.: 2 spp.) 5834000

Mendes. 1978. F.Z. 4: 77–79.

aquaticum (Vell.) Verdc.* (= *M. brasiliense* Cambess.)

Hydrophyte, usually submerged with upper part floating at surface. Leaf segments densely papillose, apex mucronulate, leaf bases accompanied by deciduous stipule-like outgrowths, linear, mostly recurved. *Flowers solitary in median and upper leaf axils of stems usually floating at surface; cream-coloured; August.* Still, shallow waters near banks of rivers, lakes, ponds. Native to South America. *Mauve 4625.*

W	S	C	N	E
---	---	---	---	---

spicatum L.

Submerged hydrophyte. Leaf segments not papillose, apex not mucronulate; stipule-like outgrowths absent or inconspicuous. *Flowers in terminal emergent spikes 50–100 mm long; probably white; December.* Still, shallow waters near banks of rivers, lakes and ponds. *Nelson 11146.*

W	S	C	N	E
---	---	---	---	---

HAMAMELIDACEAE

Shrubs or small trees. Branches and leaves densely hairy. Leaves opposite or alternate, simple. Flowers in dense, terminal spikes. Calyx tubular with (4)5 lobes. Petals (4)5, linear-spathulate or obovate, with revolute margins. Stamens 5, alternating with petals. Ovary inferior, 2-locular. Fruit a woody capsule.

Trichocladus Pers. (s. Afr.: 3 spp.) 3311000

Sonder. 1862. F.C. 2: 324–325.

Verdcourt. 1970. Kew Bull. 24: 345.

ellipticus Eckl. & Zeyh. ex Walp. subsp. ellipticus

Shrub, up to 2,5 m high. Mature leaves $\pm$ stellate-pubescent or tomentose below, apex acuminate. Petals narrow, with recurved margins. *Flowers yellow; September to November.* Woodland. *Netshiungani 953.*

W S C N E

grandiflorus Oliv.

Tree, up to 5 m high. Mature leaves glabrous below, apex acuminate. Petals broad, margins not recurved. *Flowers white; August to December.* Forest, montane grassland. *Galpin 553.*

W S C N E

HERNANDIACEAE

Tree with branches leafy at apex. Leaves alternate, with long petioles, whitish tomentose beneath. Flowers unisexual or bisexual, hairy. Male flowers numerous. Perianth 4–8-partite. Stamens 4–8. Ovary inferior, 1-locular. Fruit a bony nut, terminating in 2 long thin wings.

Gyrocarpus Jacq. (s. Afr.: 1 sp.) 2830000

Schreiber. 1968. F.S.W.A. 36: 1.

americanus Jacq.(= *G. asiaticus* Willd.)

Tree, up to 10 m high. Leaves usually 3-lobed at apex. Fruit a bony nut, produced into 2 large wings. *Flowers*

white; January to March. Bushveld. *Van Graan & Hardy 534.*

W S C N E

HYDNORACEAE

Plant parasitic on roots. Subterranean stems fleshy and warty. Leafless. Flowers putrid-smelling. Perianth 3- or 4-(5-)lobed; lobes united into basal tube of variable length, valvate, each bearing a white, spongy body. Stamens alternating with perianth lobes, inserted in tube. Ovary inferior, 1-locular; stigma cushion-shaped, 3–5-lobed, bearing numerous, radiating lamellae. Fruit subglobose, filled with gelatinous pulp. Seeds globose, free in pulp.

Hydnora Thunb. (s. Afr.: 3 spp.) 2182000

Hill. 1912. F.C. 5,1: 486–487.

Pole Evans 1931. Flower. Pl. Afr. 11: t. 428.

Musselman & Visser. 1987. Dinteria 19: 77–82.

johannis Becc.(= *H. solmsiana* Dinter)

Parasite on roots of *Acacia* species. Flowers evil-smelling when old. *Perianth* with tube 95 mm long, 35 mm

in diameter, *dark brown without, pinkish within when fresh*; lobes 80 mm long, 18 mm broad on back, keeled on face. *Muller sub PRE 677603.*

W S C N E

ICACINACEAE

Trees or shrubs, rarely climbers, sometimes spinescent. Leaves alternate, without stipules. Flowers small, regular, white or greenish. Petals 5, free. Stamens 5; filaments often hairy. Ovary superior. Fruit a drupe.

Key after Dyer, Gen. 1: 337 (1975).

- 1a Leaves opposite; inflorescence repeatedly forked **Cassinopsis**
 1b Leaves alternate 2
 2a Calyx and corolla present; flowers bisexual, in terminal panicles; style filiform **Apodytes**
 2b Calyx absent; flowers unisexual; stigma sessile; endocarp spiny on inner face; stems twining **Pyrenacantha**

Apodytes *E. Mey. ex Arn.* (s. Afr.):

1 sp.)

4686000

Mendes. 1966. F.Z. 2,1: 343–345.

dimidiata *E. Mey. ex Arn.* subsp. **dimidiata**

Evergreen tree or shrub, up to 15 m high. Leaves drying blackish. Flowers in terminal panicles. Ovary pubescent. Fruit a crustaceous drupe with lateral, fleshy appendage. *Flowers white; November to April.* Forest margins, woodland, mountain grassland. *Onderstall 994.*

W S C N E

Cassinopsis *Sond.* (s. Afr.: 2 spp.) 4671000

Mendes. 1966. F.Z. 2,1: 341–342.

ilicifolia (*Hochst.*) *Kuntze*(= *C. capensis* Sond.,= *Cassine ilicifolia* Hochst.)

Spiny, scrambling shrub, up to 5 m high. Spines straight, very acute, ± 25 mm long. Branches alternate. Leaves with margins serrulate, apex acute. Fruit yellow-orange, ovoid, subcompressed. *Flowers white; November to January.* Wooded kloofs, streambanks. *Mogg 15051.*

W S C N E

tinifolia *Hàrv.*

Straggling, unarmed shrub or small tree, up to 4 m high. Leaves entire, margin recurved, apex obtuse. Fruit an elongated, longitudinally corrugated drupe, black, $\pm 8,0 \times 4,5$ mm. *Flowers yellowish green; February.* Forest margin. *Kluge 2495.*

W S C N E

Pyrenacantha *Wight* (s. Afr.: 3 spp.) 4709000

Mendes. 1966. F.Z. 2,1: 347–351.

grandiflora *Baill.*

Twiner or rambling shrub. Leaves without hydathodes, lamina palmately 5–7-nerved, margin doubly dentate, base cordate. Inflorescences axillary. *Flowers green; October to May.* Bushveld, dry woodland. *Stalmans 218.*

W S C N E

kaurabassana *Baill.*(= *P. kamassana* Baill.)

Twining stems from rootstock. Leaves 3–5(–7)-lobed, cordate, with hydathodes. Inflorescences borne on stems with no leaves or with undeveloped ones. *Flowers green; August to October.* Bushveld, dry woodland. *Codd & Dyer 4596.*

W S C N E

ILLECEBRACEAE

Herbs or rarely shrublets. Leaves opposite, often united at base; stipules present, often membranous. Flowers small, regular, green or white. Sepals 4 or 5. Petals absent. Stamens the same number as sepals and opposite them. Ovary superior, 1-locular. Fruit small, $\pm$ enclosed in calyx.

Key after Dyer, Gen. 1: 148 (1975).

- 1a Perianth subsucculent, urceolate, with mouth of tube closed by thickened, lobed disc **Pollichia**
 1b Perianth various, not becoming succulent. 2
 2a Styles 3 **Corrigiola**
 2b Styles 2 or style short and bifid. 3
 3a Leaves aristate, plants erect **Paronychia**
 3b Leaves not aristate, plant procumbent **Herniaria**

Corrigiola *L.* (s. Afr.: 2 spp.) 2469000

Chaudhri. 1968. Med. bot. Lab. Herb. Utrecht 285: 34–52.

litoralis *L.* subsp. **litoralis** var. **litoralis**

Prostrate herb with slender, spreading stems. Leaves narrowly oblanceolate to narrowly elliptic. *Flowers in dense, sessile or subsessile clusters; white; July to June.* Sandy, open riverbanks. *Codd & Dyer 4631.*

W S C N E

litoralis *L.* subsp. **litoralis** var. **perennans** *Chaudhri*

Biennial to perennial herb. Leaves mostly narrowly oblanceolate. Cauline leaves up to $\pm 8 \times 2$ mm. Radical

leaves much longer. Bracts whitish. Flower $1,25 \times 1,50$ mm. Woodland. *Codd 10126.*

W S C N E

Herniaria *L.* (s. Afr.: 4 spp.) 2476000

Chaudhri. 1968. Med. bot. Lab. Herb. Utrecht 285: 306–400.

erckertii *F. Hermann* subsp. **erckertii** var. **erckertii**

Prostrate herb with branches up to 200 mm long. Leaves often with hairy margin. Flowers densely hirsute with 0,30–0,45 mm-long, stiff, patent hairs. *Flowers light green; October to March.* Grassland, cultivated land. *Kinges 1885.*

W S C N E

erckertii *F. Hermann* subsp. **erckertii** var. **dewetii** *F. Hermann*

Prostrate herb with branches up to 200 mm long. Leaves often subglabrous. Flowers generally shortly hirtellous to puberulous (with soft, 0.2–0.3 mm-long hairs). *Flowers yellowish green; October to January.* Grassland. *Van Wyk 5038.*

W S C N E

erckertii *F. Hermann* subsp. **pulvinata** *Chaudhri*

Pulvinate, perennial herb with stems up to 70 mm long. Shoots densely congested. Leaves covered with 0.5–0.6 (–0.7) mm-long, soft, silky white hairs in younger stages, but glabrescent with age. *Flowers with 0.5–0.6 mm-long, silky hairs, purplish green; October.* Mountain tops. *Mogg 16946.*

W S C N E

Paronychia *Mill.* (s. Afr.: 1 sp.) 2473000

Henderson & Anderson. 1966. Common weeds in South Africa: 130–131.

braziliana *DC.**

Prostrate, mat-forming annual herb with stems up to 200 mm long. Leaves opposite, with white, membranous, lanceolate-acuminate stipules. Perianth 5, each member with spreading horn near apex. *Flowers green to brown; October to April.* Weed in lawns. Native to South America. *Bornstein sub J.39406.*

W S C N E

Pollichia *Aiton* (s. Afr.: 1 sp.)

2467000

Wild. 1961. F.Z. 1: 358–360.

campestris *Aiton*

Woody, often much-branched dwarf shrub, up to 0.6 m high. Leaves opposite but arranged in false whorls. Flowers in dense axillary clusters. Swollen fleshy bracts waxy white or dull orange. *Flowers white; November to May.* Grassland, sandy soil. *Herman, Retief & Schrire 4.*

W S C N E

LAMIACEAE

Herbs or shrublets; stems usually 4-angled, especially when young; aromatic. Leaves opposite, each pair at right angles to the next, without stipules. Flowers irregular, 2-lipped or rarely bell-shaped. Petals 5, united. Stamens 2–4, attached to corolla. Ovary superior, deeply 4-lobed, style arising from between the lobes. Fruit comprising 4 nutlets.

Key after Codd in F.S.A. 28,4: 1–5 (1985).

- 1a Corolla 1-lipped or very unequally 2-lipped, with upper lip small or absent; ovary shortly 4-lobed or lobed to middle; nutlets reticulate with oblique or lateral areole occupying half to three-quarters of the length 2
- 1b Corolla 2-lipped or nearly regularly lobed; ovary deeply 4-lobed; nutlets smooth with small basal or slightly oblique areole 4
- 2a Calyx 2-lipped, inflated in fruit, lips entire; stamens not or scarcely exerted; nutlets winged **Tinnea**
- 2b Calyx subequally 5-toothed; stamens exerted, ascending; nutlets not winged 3
- 3a Inflorescence a spike-like raceme arising from a basal rosette of leaves; flowers in 2-many-flowered verticils, bluish **Ajuga**
- 3b Inflorescence racemose or paniculate with no basal rosette of leaves; flowers small, white, in 1-several-flowered pedunculate cymes **Teucrium**
- 4a Stamens ascending or spreading, never all directed downwards upon lower side of tube or lower lip of corolla (absent in female flowers of *Tetradenia*) 5
- 4b Stamens directed downwards upon lower side of corolla tube or lower lip of corolla 15
- 5a Fertile stamens 2, anther thecae separated by long connective; calyx 2-lipped **Salvia**
- 5b Fertile stamens 4; calyx 2-lipped or 5-many-toothed 6
- 6a Stamens spreading, filaments straight, with 2 directed upwards and 2 downwards (absent in female flowers of *Tetradenia*); corolla small, 2–5 mm long, subequally 4- or 5-lobed 7
- 6b Stamens all directed to upper side of tube or upper lip of corolla; corolla 5 mm long or longer (sometimes shorter in *Scutellaria*, but then calyx distinctly 2-lipped with upper lip deciduous) 8
- 7a Perennial rhizomatous herbs, monoecious **Mentha**
- 7b Semisucculent or softly woody shrubs, usually flowering after leaves are shed, dioecious **Tetradenia**
- 8a Calyx 2-lipped; perennial decumbent herbs, introduced **Scutellaria**
- 8b Calyx regularly or irregularly 5-many-toothed, mouth sometimes oblique but not distinctly 2-lipped (obscurely 2-lipped in some species of *Leucas* but then calyx 6–10-toothed) 9
- 9a Corolla usually orange or yellow, rarely cream; upper lobe 12–30 mm long; calyx 8–10-toothed **Leonotis**
- 9b Corolla not orange or yellow; upper lobe shorter than 10 mm 10
- 10a Stamens included in corolla tube; calyx glabrous within; teeth not hooked at apex **Acrotome**
- 10b Stamens reaching mouth of corolla tube or exerted (stamens included in cleistogamous flowers of *Lamium amplexicaule* but then bracts amplexicaul) 11

- 11a Calyx 6–10-toothed, often oblique at mouth but limb not spreading, glabrous within **Leucas**
 11b Calyx subequally 5-toothed, ... 12
- 12a Calyx 13(–15)-ribbed; stamens attached near corolla throat with very short upcurved filaments **Satureja**
 12b Calyx 5–10-ribbed; stamens attached within corolla and usually well exerted 13
- 13a Bracts large, amplexicaul (in naturalized species); upper corolla lip longer than the lower; lower corolla lip with lateral lobes
 absent or reduced to small acute teeth **Lamium**
 13b Bracts leaf-like or reduced, not amplexicaul; corolla lips subequal or lower lip the longer with distinct ± obtuse lateral lobes 14
- 14a Bracts leaf-like; calyx often with additional smaller teeth (5–8-toothed); upper lip of corolla subequal to the lower and beset
 with stiff brush-like hairs **Leucas**
 14b Bracts usually reduced, occasionally leaf-like; calyx always 5-toothed; upper lip of corolla glabrous or pubescent but not with
 stiff brush-like hairs, usually shorter than horizontal lower lip **Stachys**
- 15a (4) Calyx enlarged and fleshy in fruit; upper pair of stamens reduced to staminodes **Hoslundia**
 15b Calyx often somewhat enlarged but not fleshy in fruit; all 4 stamens fertile 16
- 16a Calyx falling away by a clean break above base in fruit **Aeollanthus**
 16b Calyx persistent in fruit, 3–5-toothed or bilabiate 17
- 17a Corolla with 4 subequal or slightly unequal lobes, not distinctly 2-lipped; stamens included in corolla tube **Endostemon**
 17b Corolla either distinctly 2-lipped or 5-lobed; stamens exerted 18
- 18a Calyx with 5 equal rigid spine-like teeth; flowers in dense terminal spike-like inflorescence **Pycnostachys**
 18b Calyx not rigidly spinescent 19
- 19a Calyx equally or subequally 5-toothed, uppermost tooth sometimes slightly larger than the other 4 20
 19b Calyx bilabiate 23
- 20a Bracteoles linear, setose; calyx teeth linear-subulate; corolla small, ± equally 5-lobed **Hyptis**
 20b Bracteoles absent or not as above; calyx teeth not linear-subulate; corolla bilabiate 21
- 21a Lower pair of stamens united for most of their length, upper pair attached in corolla tube, free **Syncolostemon**
 21b Lower and upper pairs of stamens attached at corolla throat, free or all shortly united at base 22
- 22a Bracts differentiated from and smaller than leaves; style bilobed; inflorescence paniculate or subspicate with flowers in
 verticils of 3–many-flowered cymes or dichasia **Plectranthus**
 22b Bracts leaf-like, becoming gradually smaller towards apex of inflorescence or towards ends of flower-bearing stems; flowers
 in dichasia arranged in terminal panicle **Rabdosiella**
- 23a Upper lip of calyx 3-toothed (teeth sometimes minute), lower lip 2-toothed or entire; inflorescence spike-like, 50–100 mm
 long, flowers in dense many-flowered cymose clusters **Geniosporum**
 23b Upper lip of calyx consisting of large, oblong to broadly ovate tooth, often decurrent on tube, distinctly larger than remaining
 teeth 24
- 24a Upper pair of filaments glabrous or pubescent but without crested or hairy knee-bend near base 25
 24b Upper pair of filaments with crested or hairy knee-bend near base 30
- 25a Lower 2 calyx teeth fused for the greater part forming an oblong bifurcate lip; lateral teeth much shorter and rounded
 **Solenostemon**
 25b Lower 4 calyx teeth subequal, lanceolate-deltoid, lower 2 often longer than lateral 2 and shortly fused at base 26
- 26a Filaments of lower pair of stamens connate for part of their length; upper pair attached in corolla tube and free **Hemizygia**
 26b Filaments all free or all connate at base 27
- 27a Corolla ± 2 mm long, obscurely bilabiate; lower lip almost flat **Basilicum**
 27b Corolla 4 mm long or longer, bilabiate; lower lip concave to boat-shaped 28
- 28a Corolla with 2 narrow pendulous lobes on each side of and free from upper lip; flowers solitary in axils of somewhat leafy
 bracts **Thorncroftia**
 28b Corolla with upper lip having 2 ear-like lobes; flowers in 1–many-flowered verticils or cymes, never all solitary 29
- 29a Upper calyx tooth not decurrent on tube; filaments attached at mouth of corolla tube; mostly herbaceous plants **Plectranthus**
 29b Upper calyx tooth decurrent on tube; upper pair of filaments attached within corolla tube; woody plants **Orthosiphon**
- 30a (24) Lower pair of calyx teeth fused or free but not ending in small pair of upcurved spinescent teeth; lateral teeth small,
 deltoid-subulate **Ocimum**
 30b Lower pair of calyx teeth fused into lip ending in small pair of upcurved spinescent teeth; lateral teeth suppressed and replaced
 by wide shoulder-like and occasionally fimbriate sinus **Becium**

Acrotome Benth. (s. Afr.: 6 spp.) 7236000

Codd, 1985, F.S.A. 28,4: 19–23.

angustifolia G. Taylor

(= *A. lancifolia* Bremek. & Oberm.)

Erect annual herb, 0.15–0.70(–1.00) m high, unbranched or branched shortly above base. Pubescence on stems appressed-antrorse. Leaves linear-lanceolate to linear. Verticils usually 15–many-flowered in dense globose clusters, verticils 1 or 2 (rarely 3) per flowering branch. Bracteoles well developed. Calyx regular, 5-toothed. *Flowers white or pale mauve; December to*

March. Open woodland on deep sandy soil. *Ger-mishuizen 3679.*

W S C N E

hispida Benth.

Perennial herb, 100–250 mm tall, branching at base from woody rootstock, densely hispid-villous. Verticils 2–10-flowered. Bracteoles poorly developed. *Flowers white; August to May.* Grassy places, often among rocks. *Codd 10098.*

W S C N E

inflata Benth.

(= *A. amboensis* Briq.,
= *Lastocorys eenii* (Hiern) Baker)

Erect annual herb, 0.15–0.70 (–1.00) m high, unbranched or branched shortly above base. Pubescence on stems appressed-retrorse. Leaves ovate to ovate-lanceolate or oblong-lanceolate. Verticils usually 15–many-flowered in dense globose clusters, verticils 1 or 2 (rarely 3) per flowering branch. Bracteoles well developed. Calyx regular, 5-toothed. *Flowers white or pale mauve; July to June.* In open woodland, especially under trees and disturbed places in grassland, and found as weed of roadsides and cultivation. *Codd 4146.*

W	S	C	N	E
---	---	---	---	---

thorncroftii Skan

Perennial herb, 100–200 mm tall, branching at base from woody rootstock, puberulous or shortly pubescent. Verticils 2–10-flowered. Bracteoles poorly developed. Calyx mouth symmetrical, 8–11-toothed. *Flowers white; August and November to January.* In grassland. *Gebbie 25.*

W	S	C	N	E
---	---	---	---	---

Aeollanthus Mart. ex Spreng. (s. Afr.:

6 spp.)

7345000

Codd. 1985. F.S.A. 28.4: 121–125.

buchnerianus Briq.

(= *A. canescens* Gürke)

Spreading, semisucculent perennial herb or shrub, 150–500 mm tall. Bracts and stems usually hirsute to canescent. Leaves ovate to broadly ovate, petiolate, crenate-dentate. Bracts broadly ovate, obtuse, usually imbricate. *Flowers pale mauve to rosy pink; December to July.* Shallow soil among rocks in semishady places. *Muller & Scheepers 159.*

W	S	C	N	E
---	---	---	---	---

neglectus (Dinter) Launert

(= *Plectranthus neglectus* Dinter)

Semisucculent annual herb, 150–300 mm tall. Leaves broadly ovate to subrotund, petiolate, subentire or obscurely toothed. Inflorescence freely branched, spikes elongate, slender, lax, 50–80 mm long. Bracts lanceolate to ovate-elliptic, acute or acuminate, overlapping only in bud. Corolla 4–5 mm long. *Flowers whitish to violet or pinkish; February to April.* In rock crevices in semishady places. *Codd 4126.*

W	S	C	N	E
---	---	---	---	---

parvifolius Benth.

Semisucculent perennial herb or shrub, 200–500 mm tall. Stems, leaves and bracts glabrous to minutely puberulous. Leaves ovate to subrotund, petiolate, margin subentire to sparingly dentate. Bracts lanceolate to ovate-elliptic, acute or acuminate, overlapping only in bud stage. Spikes compact, up to 40 mm long. Corolla 7–11 mm long. *Flowers white to pinkish with reddish*

purple markings on upper lip; October to May. High altitudes among rocks. *Codd 3734.*

W	S	C	N	E
---	---	---	---	---

rehmannii Gürke

(= *A. crenatus* S. Moore)

Semisucculent perennial herb or shrub, 200–500 mm tall. Stems and leaves pubescent. Leaves ovate to broadly ovate, petiolate, margin crenulate, usually reddish purple. Bracts lanceolate to ovate-elliptic, acute or acuminate, overlapping only in bud stage. Spikes compact, up to 40 mm long. Corolla 7–11 mm long. *Flowers white to pinkish mauve with reddish purple markings on upper lip; August and December to May.* Rocky, wooded places. *Codd 5244.*

W	S	C	N	E
---	---	---	---	---

suaveolens Mart. ex Spreng.

(= *A. heliotropioides* Oliv.)

Erect annual herb, 200–500 mm tall. Leaves lanceolate-elliptic to elliptic or ovate-lanceolate, subsessile or shortly petiolate, subentire. *Flowers blue to purple; April and May.* Forest in moist places. *Taylor 7381.*

W	S	C	N	E
---	---	---	---	---

Ajuga L. (s. Afr.: 1 spp.)

7211000

Codd. 1985. F.S.A. 28.4: 7.

ophrydis Burch. ex Benth.

Perennial herb, 60–250 mm tall. Leaves sessile, thick-textured, obovate to obovate-lanceolate, subglabrous to sparingly pilose, margin coarsely few-toothed to repand or almost entire. Median lobe of lower lip of flower deeply emarginate. *Flowers blue to mauve, rarely white; September to April.* Mainly grassland. *Codd 8226.*

W	S	C	N	E
---	---	---	---	---

Basilicum Moench (s. Afr.: 1 sp.)

7364000

Codd. 1985. F.S.A. 28.4: 216–217.

polystachyon (L.) Moench

(= *Moschosma polystachyon* (L.) Benth.,
= *Ocimum polystachyon* L.)

Herb, 300–500 mm tall. Stems 4-angled. Leaves petiolate, ovate, 20–50 × 10–35 mm, undersurface freely gland-dotted, apex acuminate, upper margin crenate-dentate, petiole slender. Inflorescence lax to fairly dense, 50–80 mm long. Calyx glandular-puberulous. *Flowers white or mauve; January and July.* In damp situations, often in disturbed places. *Van der Schijff 634.*

W	S	C	N	E
---	---	---	---	---

Becium Lindl. (s. Afr.: 9 spp.)

7366010

Codd. 1985. F.S.A. 28.4: 223–227.

Paton. 1995. Kew Bull. 50: 199–242.

Williamson & Balkwill. 1995. Kew Bull. 50: 739–750.

angustifolium (Benth.) N.E. Br.

(= *Ocimum angustifolium* Benth.,
= *O. filiforme* Gürke)

Woody perennial herb or suffrutex with several stems arising from a woody rootstock, 0,15–0,75 m high. Leaves linear or narrowly obovate, always with fascicles of younger leaves in axils, 5–40 × 1–24 mm, sessile. Corolla shorter than 9 mm, upper lip shorter than 5 mm, lobes of upper lip denticulate or entire. *Flowers white; October to May*. Open woodland among rocks, but sometimes on streambanks. *Codd & Dyer 9000*.

W	S	C	N	E
---	---	---	---	---

citriodorum S.D. Will. & K. Balkwill

Perennial herb or suffrutex, (0,25)–0,32–0,50 m tall. Stem single from base, branching above. Leaves ovate or elliptic, (9)–10–16(–24) × (3)–4–7(–11) mm, slightly succulent, pubescent on both surfaces. Upper lip of corolla crenate, with lateral edges spreading. *Flowers white or mauve; October to April*. Rocky hillsides with clay soils derived from dolomite. *Schlechter 4684*.

W	S	C	N	E
---	---	---	---	---

coddii S.D. Will. & K. Balkwill

Perennial herb or suffrutex, (0,4)–0,6–1,5 m high. Stem single from base, branching above. Leaves broadly ovate or obovate, (14)–16–28(–37) × (7)–9–15(–20) mm, almost glabrous, but with some long-stalked glandular hairs abaxially, petioles longer than 3 mm. Upper lip of corolla entire, with lateral edges spreading. *Flowers white or mauve; October to April*. Rocky hillsides with dolomite-derived clay soils or in riverine vegetation on sandy, dry banks of streams with their origin in dolomitic areas. *Balkwill & Cadman 3783*.

W	S	C	N	E
---	---	---	---	---

filamentosum (Forssk.) Chiov.

(= *Ocimum knyanum* Vatke,
= *Becium knyanum* (Vatke) N.E. Br. ex Broun & Massey)

Soft shrub, 0,3–0,8(–1,0) m high. Stems usually solitary at base, branching freely above. Leaves linear or narrowly ovate or obovate, 10–40(–50) × 3–20 mm, petioles 2–10 mm long. Corolla shorter than 9 mm, upper lip shorter than 5 mm, lobes of upper lip usually entire. *Flowers white to mauve; October to April*. Open woodland or thorn scrub on sandy or stony places. *Codd & De Winter 4998*.

W	S	C	N	E
---	---	---	---	---

obovatum (E. Mey. ex Benth.) N.E. Br. subsp.**obovatum** var. **obovatum**

(= *B. grandiflorum* (Lam.) Pic. Serm. var. *obovatum* (E. Mey. ex Benth.) Sebald,
= *Ocimum obovatum* E. Mey. ex Benth.)

Perennial herb, 100–250(–300) mm tall. Stems several, arising annually from a woody rootstock, sparingly branched above. Leaves variously shaped, mostly more than 3 times longer than broad, glabrous to densely pubescent, apex acute to rounded, sessile or petiole up to 10 mm long. Upper lip of corolla with lobes toothed

or fimbriate or at least sinuate. *Flowers white to pale mauve; July to June*. Dense grassland. *Sidey 1333*.

W	S	C	N	E
---	---	---	---	---

obovatum (E. Mey. ex Benth.) N.E. Br. subsp.**obovatum** var. **galpinii** (Gürke) N.E. Br.

(= *B. grandiflorum* (Lam.) Pic. Serm. var. *galpinii* (Gürke) Sebald,
= *Ocimum galpinii* Gürke)

Perennial herb, 100–250(–300) mm tall. Stems several, arising annually from woody rootstock, sparingly branched above. Leaves variously shaped, mostly less than 3 times longer than broad, densely pubescent, apex rounded or obtuse, sessile or petioles up to 10 mm long. Upper lip of corolla with lobes toothed or fimbriate or at least sinuate. *Flowers white to pale mauve; July to June*. Dense grassland. *Onderstall 757*.

W	S	C	N	E
---	---	---	---	---

waterbergensis S.D. Will. & K. Balkwill

Soft shrub, (0,2)–0,3–0,5 m tall. Stem single from base, branching above. Leaves elliptic to ovate, (7)–11–21(–31) × (2,4)–4,0–8,0(–11,6) mm, pubescent on upper surface, with rare long-stalked, glandular trichomes. Upper lip of corolla fimbriate, lateral edges turned inwards, with sides of upper lip parallel. *Flowers white or mauve; December to April*. Rocky hillsides and plains with very sandy, nutrient-deficient soils derived from Waterberg sandstone. *Meeuse 10019*.

W	S	C	N	E
---	---	---	---	---

Endostemon N.E. Br. (s. Afr.: 3 spp.) 7345010

Codd. 1985. F.S.A. 28,4: 127–130.

obtusifolius (E. Mey. ex Benth.) N.E. Br.

(= *Ocimum obtusifolium* E. Mey. ex Benth.)

Soft, straggling to erect shrub or herb, 0,5–1,5 m high. Leaves broadly ovate, 10–30 mm broad. *Flowers white; November to May*. Wooded streambanks and forest margins. *Codd 9438*.

W	S	C	N	E
---	---	---	---	---

tenuiflorus (Benth.) M.R. Ashby

(= *Orthosiphon tenuiflorus* Benth.)

Small shrub, 150–250 mm tall. Leaves linear to linear-oblongate, 2–5 mm broad. Verticils 2-flowered; bracts small, 3–5 mm long. Calyx throat villous, lateral calyx teeth subulate. *Flowers whitish to mauve or pink; August and November to May*. Dry mopane-*Commiphora-Acacia* woodland. *Codd & Dyer 3831*.

W	S	C	N	E
---	---	---	---	---

tereticaulis (Poir.) M.R. Ashby

(= *E. ocimoides* Bremek.,

= *Ocimum tereticaule* Poir.)

Small shrub, 200–500 mm tall. Leaves oblanceolate to obovate, 5–12 mm broad. Verticils 4–6-flowered; bracts leaf-like, 8–15 mm long. Calyx throat not villous, lateral calyx teeth oblong. *Flowers mauve to purple; October to July*. Dry open woodland in sandy and rocky places. *Meeuse 10623*.

W	S	C	N	E
---	---	---	---	---

Geniosporum Wall. ex Benth. (s. Afr.:

1 sp.)

7363000

Codd. 1985. F.S.A. 28,4: 214–215.

angolense Briq.

Perennial herb, 0.5–1.2 m high. Leaves petiolate, lanceolate to ovate-lanceolate, 50–70 × 15–25 mm, gland-dotted on both surfaces, margin serrate. Inflorescence terminal, dense, spike-like, 50–100 mm. Flowers white or mauve; November to April. On streambanks and marshy places. Codd & Bruce 3661.

W S C N E

Hemizygia (Benth.) Briq. (s. Afr.:

28 spp.)

7365000

Codd. 1985. F.S.A. 28,4: 193–211.

albiflora (N.E. Br.) M.R. Ashby

(= *Orthosiphon albiflorus* N.E. Br.,
= *O. decipiens* N.E. Br.)

Small, woody, decumbent to ascending shrub, 0.3–1.5 m high. Leaves narrow, leathery, margin revolute, undersurface thickly tomentose with long white hairs, upper surface somewhat varnished. Flowers white; September to April. In crevices in quartzite rocks. Van der Schijff 4922.

W S C N E

bracteosa (Benth.) Briq.

(= *Ocimum bracteosum* Benth.,
= *Orthosiphon bracteosus* (Benth.) Baker)

Herb, 0.25–0.70 m high. Leaves sessile, undersurface sparingly to densely canescent. Terminal bracts of inflorescence distinct from lower ones, forming persistent violet or white coma, broadly ovate, 5–10 × 4–8 mm. Verticils 4–6-flowered. Stamens exerted beyond lower lip of corolla. Flowers white or tinged with mauve, rarely violet; January to June. Among rocks, in watercourses and in open sandy places in dry tropical woodland. Codd 4260.

W S C N E

canescens (Gürke) M.R. Ashby

(= *Orthosiphon affinis* N.E. Br.,
= *O. canescens* Gürke)

Herb, 0.3–0.6 m high. Leaves linear to lanceolate or, rarely, ovate-lanceolate, densely grey-tomentose, subsessile or shortly petiolate. Verticils 4–6-flowered; bracts small, early deciduous. Upper part of stamens exerted from corolla tube. Flowers white to pale mauve or purplish; November to April. Among rocks in open arid to moist woodland and marginal grassland. Theron 1671.

W S C N E

elliottii (Baker) M.R. Ashby

(= *Orthosiphon elliottii* Baker,
= *O. messinensis* Good)

Soft shrub, 0.35–0.60 m high. Leaves densely stellate grey velvety on both surfaces. Verticils 2–6-flowered;

bracts broadly ovate to subrotund, persisting as dense, mauve-purple coma. Upper pair of stamens exerted from corolla tube. Stigma capitate. Flowers white to pale mauve; August to May. Dry subtropical savanna. Vahrmeijer 1358.

W S C N E

foliosa S. Moore

(= *H. humilis* (N.E. Br.) M.R. Ashby,
= *Orthosiphon foliosus* (S. Moore) N.E. Br.)

Decumbent to ascending perennial herb. Leaves ovate to ovate-elliptic or elliptic, 25–70 × 15–35 mm, subglabrous to pilose and gland-dotted. Terminal bracts of inflorescence distinct and forming persistent mauve-purple coma. Verticils 2-flowered. Corolla 12–15 mm long. Stamens exerted beyond lower lip of corolla. Flowers whitish to mauve; September to November and in May. Dense mountain grassland, among rocks. Codd 2101.

W S C N E

gerrardii (N.E. Br.) M.R. Ashby

(= *Orthosiphon gerrardii* N.E. Br.)

Soft shrub, up to 1 m high. Leaves densely and coarsely grey stellate-velvety on both surfaces. Verticils all 2-flowered, terminal bracts persisting as mauve-purple coma. Corolla 17–20 mm long. Stigma shortly bifid. Flowers mauve-pink; November. In grass among rocks. Dyer & Verdoorn 5829.

W S C N E

incana Codd

Shrub, up to 0.6 m high. Leaves ovate or lanceolate to elliptic-lanceolate, 15–35 × 6–12 mm, densely grey stellate-velvety, upper surface darker. Verticils 4–6-flowered. Calyx 8–9 mm long. Corolla 12–15 (tube 10–12) mm long. Flowers mauve; September to March. Sandy soil among quartzite rocks. De Winter 5083.

W S C N E

linearis (Benth.) Briq.

(= *Orthosiphon linearis* Benth.)

Weak perennial herb, 300–500 mm tall. Stems subglabrous with few long hairs, often somewhat varnished. Leaves linear, subglabrous. Verticils 4–6-flowered. Upper pair of stamens exerted from corolla tube. Flowers mauve with violet stripes; May. Open places in dry woodland. Speedy 15/1.

W S C N E

macrophylla (Gürke) Codd

(= *Orthosiphon macrophyllus* (Gürke) N.E. Br.,
= *Syncolostemon macrophyllus* Gürke)

Soft shrub, 1.0–1.5 m high. Leaves 50–90 × 25–30 mm, concolorous, both surfaces densely and coarsely stellate-velvety, petiole 2–4 mm long. Inflorescence laxly branched, up to 600 mm long; verticils 3–6-flowered. Calyx setose in throat. Flowers purple; April to May. Dense grassland on slopes, usually among dolerite rocks. Devenish 1590.

W S C N E

modesta Codd

Herb, 120–250 mm tall. Leaves lanceolate-elliptic or elliptic to broadly ovate, 6–12 × 4–6 mm, sparingly to densely hispid. Verticils 2-flowered, bracts caducous. Stamens exserted from corolla tube. *Flowers white to pale mauve; August to December.* Mountain grassland. *Acocks 12867.*

W	S	C	N	E
---	---	---	---	---

obermeyerae M.R. Ashby

Soft shrub, 1.0–1.5 m high. Leaves (25–)30–60 × 18–30 mm, discolorous, upper surface subglabrous, undersurface densely grey stellate-pubescent, petiole 6–12 mm long. Inflorescence lax to dense, up to 250 mm long; verticils 4–6-flowered. *Flowers mauve-pink; July to June.* On stony hillsides and forest margins. *Codd 8393.*

W	S	C	N	E
---	---	---	---	---

parvifolia Codd

Twiggy shrub, 0.5–1.0 m high. Leaves ovate to broadly ovate, 6–11 × 4–9 mm, discolorous, upper surface subglabrous, undersurface densely grey tomentose with dendroid hairs. Verticils all 2-flowered. *Flowers white; September to March.* Among quartzite rocks. *Davidson 2663.*

W	S	C	N	E
---	---	---	---	---

persimilis (N.E. Br.) M.R. Ashby

(= *Orthosiphon persimilis* N.E. Br.,
= *O. rogersii* N.E. Br.)

Bushy herb, 150–300 mm tall. Leaves lanceolate-elliptic, 15–20 × 7–9 mm; sparingly pubescent. Terminal bracts of inflorescence distinct and forming persistent whitish to rose-purple coma. Verticils 2–6-flowered. Stamens not exserted beyond lower lip of corolla. *Flowers white; August to December and in March.* Grassy places among rocks and in open woodland. *Mauve 4942.*

W	S	C	N	E
---	---	---	---	---

petiolata M.R. Ashby

Soft shrub, up to 1 m high. Leaves ovate to ovate-lanceolate, 20–55 × 6–30 mm, undersurface with fine greyish white pubescence, petiole 6–14 mm long. Apical bracts of inflorescence sometimes persisting as purple coma, rather small. Verticils 4–6-flowered. Stamens exserted from corolla tube. *Flowers pale mauve to lilac; December to July.* Wooded hillsides and forest margins. *Codd 9423.*

W	S	C	N	E
---	---	---	---	---

petrensis (Hiern) M.R. Ashby

(= *Orthosiphon petrensis* Hiern,
= *O. varians* N.E. Br.)

Annual or weak perennial herb, 0.2–0.6 m high. Leaves subsessile or shortly petiolate, linear-lanceolate to oblong-lanceolate or ovate-lanceolate, 20–50 × 5–15 mm, sparingly to densely pilose or canescent, often with long and short hairs intermingled. Terminal bracts of inflorescence small, often purplish, caducous. Verticils

4–6-flowered; stamens exserted from corolla tube. *Flowers pinkish to lilac or violet; July to June.* Among rocks and in open places and watercourses in semi-arid woodland. *Codd & Dyer 3832.*

W	S	C	N	E
---	---	---	---	---

pretoriae (Gürke) M.R. Ashby subsp. **pretoriae**

(= *Orthosiphon pretoriae* Gürke)

Bushy herb, 100–300 mm tall. Leaves narrowly elliptic to oblanceolate, obovate or ovate, 8–24 × 2–15 mm, subglabrous to densely pubescent. Verticils 3–6-flowered, in axils of persistent, leaf-like bracts. *Flowers whitish to pale mauve; October to May.* Dense grassland often among rocks. *Codd 8027.*

W	S	C	N	E
---	---	---	---	---

pretoriae (Gürke) M.R. Ashby subsp. **heterotricha**

Codd

Bushy herb, 100–300 mm tall. Leaves ovate to ovate-rotund, 8–24 × 2–15 mm, densely stellate pubescent often mixed with long simple hairs. Verticils as in subsp. *pretoriae*. *Flowers whitish to pale mauve; October.* Grassland. *Codd 2102.*

W	S	C	N	E
---	---	---	---	---

punctata Codd

Soft shrub, 0.6–1.2 m high. Leaves elliptic or elliptic-oblanceolate to obovate, 10–15 × 3–10 mm, subglabrous to hispidulous, gland-dotted. Verticils 2-flowered. Upper pair of stamens exserted from corolla tube. *Flowers pale mauve; July to June.* Stony slopes in grassland. *Van Jaarsveld 1014.*

W	S	C	N	E
---	---	---	---	---

rehmannii (Gürke) M.R. Ashby

(= *Orthosiphon rehmannii* Gürke)

Soft shrub, 0.3–0.8 m high. Leaves elliptic to oblong-elliptic, 10–22 × 3–8 mm, upper surface dark grey to brownish and finely pubescent, undersurface densely grey to yellowish grey stellate-velvety, margin revolute. Verticils 4–6-flowered. Corolla tube widening towards mouth. Stamens exserted beyond lower lip of corolla. *Flowers pale mauve; November to April.* In shallow soil among rocks in grassland, often near forest margins. *Codd 9426.*

W	S	C	N	E
---	---	---	---	---

rugosifolia M.R. Ashby

Soft shrub, ± 1 m high. Leaves ovate-lanceolate to elliptic, 15–25 × 6–10 mm, upper surface rugose, puberulous, undersurface densely greyish stellate-tomentose. Verticils 2-flowered; terminal bracts persistent, purplish, 10 × 5 mm. *Flowers pink; December to March.* Among quartzite rocks. *Van Jaarsveld 6038.*

W	S	C	N	E
---	---	---	---	---

subvelutina (Gürke) M.R. Ashby

(= *Orthosiphon subvelutinus* Gürke,
= *O. heterophyllus* Gürke)

Small soft shrub or herb, 200–500(–800) mm tall. Lower internodes of stem shorter than 20 mm. Leaves

linear to linear-lanceolate, 5–10 × 1–2(–5) mm, upper surface stellate-scabrid, undersurface yellowish stellate-tomentose, margin revolute. Verticils 4–6-flowered in axils of persistent, leaf-like bracts. Corolla tube cylindrical, often slightly narrowed at mouth. Stamens scarcely exerted. *Flowers white, often tinged with mauve; September to April.* Dense grass among quartzite rocks and in rock crevices. *Codd 6446.*

W S C N E

teucrifolia (Hochst.) Briq.

(= *Ocimum teucrifolium* Hochst.,
= *Orthosiphon teucrifolius* (Hochst.) N.E. Br.)

Bushy herb, 150–300 mm tall. Lower internodes of stem usually longer than 20 mm. Leaves linear to lanceolate or elliptic, 8–18 × 3–6 mm, upper surface stellate-scabrid, undersurface greyish stellate-tomentose, discolorous, margin revolute. Verticils 4–6-flowered, in axils of persistent leaf-like bracts. Corolla tube cylindrical, often slightly narrowed at mouth. Stamens scarcely exerted. *Flowers mauve; August to February.* In dense grassland, tending to spread in overgrazed areas. *Muller 2151.*

W S C N E

thorncroftii (N.E. Br.) M.R. Ashby

(= *Orthosiphon thorncroftii* N.E. Br.)

Perennial herb, 150–300 mm tall. Leaves elliptic to linear-elliptic, 15–40 × 4–10 mm, concolorous, sparingly pubescent. Terminal bracts of inflorescence distinct and forming persistent mauve-purple coma, lanceolate to linear-lanceolate. Verticils 3–6-flowered. Corolla tube 10–12 mm long. *Flowers mauve; August to October.* Mountain grassland. *Codd 9791.*

W S C N E

transvaalensis (Schltr.) M.R. Ashby

(= *Orthosiphon muddii* N.E. Br.,
= *O. transvaalensis* Schltr.)

Small soft shrub, 0.3–1.0 m high. Leaves ovate to broadly ovate, 15–40 × 8–22 mm or ovate-elliptic to ovate, 12–20 × 4–8 mm, sparingly to densely pubescent. Terminal bracts of inflorescence distinct and forming persistent pinkish purple coma, ovate to lanceolate. Verticils 3–6-flowered. Corolla tube 14–17 mm long. *Flowers whitish to mauve or lilac-pink; July to June.* Grassy slopes and flats, often among rocks. *Mauve 4806.*

W S C N E

Hoslundia Vahl (s. Afr.: 1 sp.)

7357000

Codd. 1985. F.S.A. 28,4: 182–183.

opposita Vahl

(= *H. decumbens* Benth.)

Soft shrub or herb, 0.6–1.2 m high. Leaves opposite or sometimes ternate, ovate-lanceolate to ovate-elliptic, margin crenate-dentate. Calyx becoming globose and fleshy in fruit. Fruit subglobose, berry-like, orange-coloured. *Flowers white or cream; September to Febru-*

ary. Tropical and subtropical open woodland. *Zambatis 1302.*

W S C N E

Hyptis Jacq. (s. Afr.: 3 spp.)

7342000

Codd. 1985. F.S.A. 28,4: 117–119.

pectinata (L.) Poit.

(= *Nepeta pectinata* L.)

Annual or short-lived perennial herb, 0.6–2.3 m high. Leaves densely pubescent to whitish tomentose below. Cymes secund, pectinate. Bracteoles linear-setose. *Flowers whitish to mauve; July to June.* Riverbanks and in moist places. *Codd 7924.*

W S C N E

spicigera Lam.

Annual herb, 0.5–2.0 m high. Leaves subglabrous below. Cymes glomerate forming dense spike-like inflorescence. Bracteoles linear-setose. *Flowers whitish; March to May.* Weed. *Junod Tvl. Mus. 10215.*

W S C N E

Lamium L. (s. Afr.: 1 sp.)

7271000

Codd. 1985. F.S.A. 28,4: 46–47.

amplexicaule L.*

Annual herb, 100–300(–400) mm tall. Leaves petiole, subrotund to reniform, base cordate to truncate, margin coarsely and deeply crenate or lobed. Bracts clasping, resembling leaves. *Flowers purple to whitish; March to September.* Widespread weed in gardens and waste places. Native to Europe and Asia. *Ubbink 1000.*

W S C N E

Leonotis (Pers.) R. Br. (s. Afr.: 3 spp.)

7264000

Iwarsson. 1985. F.S.A. 28,4: 31–37.

leonurus (L.) R. Br.

(= *L. leonurus* (L.) R. Br. var. *albiflora* Benth.,
= *Phlomis leonurus* L.)

Shrub, 2–5 m high. Leaves linear, length/width ratio 5:1 to 10:1. Calyx shorter than 15 mm, with 10 subequal teeth. Lower lip of corolla with (3) separate lobes, reflexed. *Flowers orange (sometimes white); November and March to June.* Forest margins, often on riverbanks, on rocky hillsides or in tall grassland. *Van Hoepen 1758.*

W S C N E

nepetifolia (L.) R. Br.

(= *L. kwebensis* N.E. Br.,
= *Phlomis nepetifolia* L.)

Annual or short-lived perennial herb, 1–3 m high, not branched at base. Nodes with tuft of long hairs. Leaves

broadly ovate. Calyx longer than 15 mm, 2-lipped, dorsal tooth supported by 3 veins, usually more than twice as long as the other teeth. Lower lip of corolla with lobes united at base, patent, corolla tube with 3 rings of hairs inside. *Flowers orange; January to June.* Weed found at roadsides and in abandoned cultivations. *Codd 9905.*

W S C N E

ocymifolia (Burm. f.) Iwarsson var. **ocymifolia**

(= *L. dubia* E. Mey.,
= *Phlomis ocymifolia* Burm. f.)

Slender shrub, 1–3 m high. Nodes without long hairs. Mature leaves shorter than 50 mm, orbicular to broadly ovate, truncate to cuneate-attenuate at base, petiole more than half as long as leaf blade. Calyx longer than 15 mm, 2-lipped. Lower lip of corolla with lobes united at base, corolla tube with 1 ring of hairs inside. *Flowers orange; July to June.* Rocky outcrops and well-drained soil on rocky hillsides. *Strey & Schlieben 8472.*

W S C N E

ocymifolia (Burm. f.) Iwarsson var. **raineriana** (Vis.)

Iwarsson
(= *L. dysophylla* Benth.,
= *L. bachmannii* Gürke)

Shrub, 1–5 m high. Stem sparsely branched with long internodes. Mature leaves longer than 50 mm, velvety to almost glabrous. Calyx, corolla and nodes as in var. *ocymifolia*. *Flowers orange-rufous (rarely cream to buff); November to August.* Grassland, hillsides, rocky outcrops. *Muller & Scheepers 127.*

W S C N E

ocymifolia (Burm. f.) Iwarsson var. **schinzii** (Gürke)

Iwarsson
(= *L. microphylla* Skan,
= *L. schinzii* Gürke)

Shrub, 1–2 m high. Mature leaves shorter than 50 mm, ovate to narrowly ovate, attenuate at base, petiole less than half as long as leaf blade. Calyx, corolla and nodes as in var. *ocymifolia*. *Flowers orange; November to July.* Rocky slopes and hills and along rivers, often on sandy soil. *Van Hoepen sub PRE 38746.*

W S C N E

Leucas Burm. ex R. Br. (s. Afr.: 8 spp.) 7268000

Codd. 1985. F.S.A. 28,4: 38–45.

capensis (Benth.) Engl.

(= *Lasiocorys capensis* Benth.)

Small shrub, 0,25–1,50 m high. Verticils 2–12-flowered, closely placed. Bracteoles absent or minute, 1–2 mm long. Calyx glabrous to hispid, teeth 5 (occasionally with 1 or 2 small intermediate teeth). *Flowers white; July to June.* Grassland and low woodland, often on surface limestone and among rocks. *Zambatis 149.*

W S C N E

glabrata (Vahl) Sm. var. **glabrata**

(= *L. natalensis* Sond.,
= *Phlomis glabrata* Vahl)

Perennial herb or shrub, 0,25–0,80 m high. Leaves ovate to ovate-lanceolate. Verticils 2–12-flowered, closely placed. Bracteoles absent or minute, 1–2 mm long. Calyx glabrous to hispid, teeth 10. Corolla 12–15 mm long. *Flowers white; July to June.* In woodland and among rocks in grassy places. *Germishuizen 5135.*

W S C N E

glabrata (Vahl) Sm. var. **linearis** Codd

Perennial herb, 300–500 mm tall. Leaves linear. Verticils, bracteoles, calyx and corolla as in var. *glabrata*. *Flowers white; March.* In open savanna on rocky soil. *Germishuizen 1360.*

W S C N E

martinicensis (Jacq.) R. Br.

(= *Clinopodium martinicense* Jacq.)

Erect annual herb, 0,15–1,20 m high. Leaves ovate to ovate-lanceolate, usually wider than 10 mm. Verticils many-flowered, glomerate, distantly spaced. Bracteoles linear, 5–12 mm long. Calyx tube abruptly curved near apex. *Flowers white; October to June.* Weed of cultivated land and disturbed places. *Acocks 11323.*

W S C N E

neuflyzeana Courbai

Erect or decumbent annual or weakly perennial herb, 150–400 mm tall. Verticils 2–12-flowered, closely placed. Bracteoles absent or minute, 1–2 mm long. Calyx glabrous to hispid, teeth 10. Corolla 6–7 mm long. *Flowers white; December to September.* Dry woodland. *Codd 6109.*

W S C N E

sexdentata Skan

Erect annual herb, 0,15–0,60 m high. Leaves ovate to ovate-lanceolate, usually wider than 10 mm. Verticils many-flowered, glomerate, distantly spaced. Bracteoles linear, 5–12 mm long. Calyx tube straight, teeth 6. Corolla ± 15 mm long. *Flowers white; July to June.* Semi-arid grassland and open woodland, usually in sandy soil; often in disturbed places. *Codd 4045.*

W S C N E

Mentha L. (s. Afr.: 3 spp.)

7328000

Tucker et al. 1980. Taxon 29: 234.
Codd. 1985. F.S.A. 28,4: 107–111.

aquatica L.

(= *M. dumetorum* Schult. var. *natalensis* Briq.)

Perennial herb, up to 0,8 m high. Leaves usually petiolate. Inflorescence of oblong or globose clusters, 14–20 mm in diameter. *Flowers pale to deep mauve, pinkish or purple; October to April.* In marshes and wet places. *Meeuse 9761.*

W S C N E

longifolia (L.) L. subsp. **capensis** (Thunb.) Briq.

(= *M. capensis* Thunb.,

= *M. longifolia* (L.) L. subsp. *bouvieri* (Briq.) Briq.)

Perennial herb, up to 1,5 m high. Leaves sessile or subsessile, linear-lanceolate to lanceolate, broader than 5 mm, fairly densely to densely pubescent on one or both surfaces. Inflorescence cylindrical, tapering towards apex. *Flowers white to mauve; December to January and in April.* Wet places. *Leistner 113.*

W S C N E

longifolia (L.) L. subsp. **polyadena** (Briq.) Briq.

(= *M. sylvestris* L. subsp. *polyadena* Briq.)

Perennial herb, up to 1,5 m high. Leaves and inflorescence as in subsp. *capensis* but leaves glabrous or with a few scattered hairs beneath. *Flowers white to mauve; November to April.* Along watercourses, on riverbanks and in moist places. *Jacobsen 2637.*

W S C N E

Ocimum L. (s. Afr.: 3 spp.)

7366000

Codd. 1985. F.S.A. 28,4: 219–222.

Paton. 1992. Kew Bull. 47: 403–435.

americanum L. var. **americanum**

(= *O. canum* Sims)

Perennial herb or shrub, 150–500(–800) mm tall. Calyx tube hairy inside, lower lip of calyx deeply 2-toothed, spreading. *Flowers lilac to mauve or white; September to June.* Sandy soil on mountainsides, riverbanks, bush edges, tending to spread in disturbed areas. *Codd & De Winter 4974.*

W S C N E

gratissimum L. subsp. **gratissimum** var. **gratissimum**

(= *O. urticifolium* Roth subsp. *urticifolium*)

Perennial herb or shrub, 0,4–1,5 m high. Leaves dentate, (40–)50–120 × 25–65 mm. Inflorescence (60–)70–150 mm long. Calyx tube glabrous inside, lower lip of calyx emarginate or shortly toothed, eventually closing mouth of calyx. *Flowers white; July to June.* Sandy soil on mountainsides or in forest, forest edges or riverbanks. *Codd 5216.*

W S C N E

Orthosiphon Benth. (s. Afr.: 9 spp.)

7367000

Codd. 1985. F.S.A. 28,4: 229–236.

amabilis (Bremek.) Codd

(= *Nautochilus amabilis* Bremek.)

Twiggy shrub, 0,6–0,9 m high. Leaves broadly ovate to subrotund, 10–15(–20) × 10–14(–18) mm, margin finely crenate. Bracts 4–6 mm long. Lower lip of corolla 8–9 mm long. Upper pair of stamens attached near base of corolla tube and exserted by 9 mm. *Flowers mauve or pink; January to June.* Dry, wooded slopes. *Barnard & Mogg 686.*

W S C N E

fruticosus Codd

Twiggy shrub, 0,5–1,2 m high. Leaf blade 8–12 mm long, appressed canescent especially on lower surface. Rhachis with numerous short stipitate glands. Upper pair of stamens attached ± 2 mm from throat of corolla tube and exserted by 2 mm. Bracts 2–4 mm long. *Flowers purple, gland-dotted; November to February and in June.* Dry bushveld on stony slopes. *Codd 8797.*

W S C N E

labiatus N.E. Br.

(= *Nautochilus labiatus* (N.E. Br.) Bremek.,

= *N. breyeri* Bremek.)

Soft shrub, 0,6–1,8 m high. Leaves broadly ovate to subrotund, 30–80 × 20–60 mm, margin regularly and coarsely crenate. Bracts 8–10 mm long. Lower lip of corolla 8–12 mm long. Upper pair of stamens attached near base of corolla tube and exserted by 9–12 mm. *Flowers pale mauve to pink; November to May.* Dry, rocky, wooded hillsides and wooded watercourses. *Codd 9534.*

W S C N E

pseudoserriatus M.R. Ashby

Small shrub, 300 mm or more tall. Leaves ovate to broadly ovate, 20–40 × 12–20 mm. Bracts 3–6 mm long. Corolla tube 5–7 mm long, lower lip 5–6 mm long. Upper pair of stamens attached near base of corolla tube and exserted by 7–8 mm. *Flowers whitish to mauve or pink; August to April.* Rocky, wooded slopes. *Germishuizen 3377.*

W S C N E

rubicundus (D. Don) Benth.

(= *Plectranthus rubicundus* D. Don,

= *O. coloratus* Vathek)

Perennial herb, 0,25–0,60 m high. Leaves ovate-elliptic to ovate-lanceolate, 35–80 mm long, base cuneate to obtuse, glabrous to sparingly pubescent, petiole 0–3 mm long. Rhachis pubescent. Bracts 2,5–3,0 mm long. Upper pair of stamens attached ± 2 mm from throat of corolla tube and exserted by 2 mm. *Flowers white to mauve; November to December.* Grassy places in dense woodland. *Dryfhout 833.*

W S C N E

serratus Schltr.

Shrub, 0,3–0,9 m high. Leaves broadly ovate, ovate-oblong or obovate-elliptic, 40–90 × 20–35 mm, margin distinctly and regularly serrate. Bracts 6–10(–16) mm long. Corolla tube (6–)9–16 mm long, lower lip 5–6 mm long. Upper pair of stamens attached near base of corolla tube and exserted by 4–5 mm. *Flowers mauve to purple; July to April.* Dense grass on stony hillsides. *Codd 9786.*

W S C N E

suffrutescens (Thonn.) J.K. Morton

(= *O. wilmsii* Gürke,

= *O. australis* Vathek)

Herb, 0,15–0,60 m high. Leaves ovate to broadly ovate, 15–40(–50) × 10–30 mm, base truncate to obtuse,

subglabrous to pubescent, petioles 4–20 mm long, rhachis pubescent. Bracts 2.5–3.0 mm long. Upper pair of stamens attached $\pm$ 2 mm from throat of corolla tube and exserted by 2 mm. *Flowers white to mauve; July to June*. Dry, wooded country. *Codd 9216*.

W S C N E

tubiformis R.D. Good

Shrub, 0.3–0.9 m high. Leaves lanceolate-elliptic to ovate or obovate, 14–20 $\times$ 7–10 mm, margin finely serrate to subentire. Bracts 5–8 mm long. Corolla tube 20–35 mm long, lower lip 6 mm long. Upper pair of stamens attached near base of corolla tube and exserted by 5–6 mm. *Flowers whitish to pale or deep mauve; December to May*. Wooded, stony slopes in dry parts. *Codd & Dyer 7696*.

W S C N E

Plectranthus L'Hér. (s. Afr.: 45 spp.) 7350000

Codd. 1985. F.S.A. 28,4: 137–172.

barbatus Andrews*

(= *Coleus barbatus* (Andrews) Benth.)

Semisucculent woody herb or shrub, up to 3 m high. Leaves ovate to broadly ovate-elliptical, tomentose, 50–90 $\times$ 30–50 mm, not succulent. Bracts forming conspicuous 4-angled coma at apex of inflorescence. Mature calyx with upper tooth distinctly broader than rest, erect, ovate-deltoid to broadly ovate, villous in throat. *Flowers pale blue-mauve; January to June*. Escaped from cultivation. Native to Europe and Asia. *Hardy 6306*.

W S C N E

caninus Roth

(= *Coleus caninus* (Roth) Vatke,
= *C. omahekense* Dinter)

Semisucculent annual or weak perennial herb, 150–400 mm tall. Leaves semisucculent, ovate-lanceolate to obovate 20–50 $\times$ 15–35 mm. Bracts forming conspicuous 4-angled coma at apex of inflorescence. Mature calyx with upper tooth distinctly broader than rest, erect, ovate-deltoid to broadly ovate; villous in throat. Corolla shorter than 10 mm. *Flowers blue-purple; February and May*. Growing communally under trees in dry open woodland or on rocky outcrops. *Mauve 5284*.

W S C N E

ciliatus E. Mey. ex Benth.

(= *P. natalensis* Gürke)

Decumbent to ascending herb, up to 0.6 m high. Leaf margin and calyx ciliate with purplish multicellular hairs, undersurface of leaf dotted with minute honey-coloured gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube shorter than 10 mm. Fertile stamens 4. *Flowers with whitish background, freely speckled with purple; February to April*. In glades in forest and in moist, shady places. *Codd 9528*.

W S C N E

cylindraceus Hochst. ex Benth.

(= *P. glomeratus* R.A. Dyer,
= *P. spiciformis* R.A. Dyer)

Semirosculate, erect or decumbent, succulent perennial herb, 0.6–1.5 m high. Leaves succulent, 25–50 $\times$ 15–40 mm. Flowers in densely glomerate, villous clusters. Mature calyx subequally 5-toothed. Corolla 4–5 mm long. *Flowers pale mauve and white, whitish or occasionally yellowish; February to August*. Growing communally in dry woodland under thorn trees as well as in crevices on rocky slopes. *Codd 8679*.

W S C N E

dolichopodus Briq.

Erect or straggling herb, 0.25–1.00 m high. Leaves broadly ovate to ovate-deltoid, 30–100 $\times$ 25–80 mm, undersurface dotted with minute colourless gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube 4–7 mm long, widening slightly towards throat, upper lip 1.5–2.0 mm long. *Flowers sky-blue to deep blue; January to August*. Ground-layer herb in cool moist forest. *Muller & Scheepers 174*.

W S C N E

dolomiticus Codd

Semisucculent perennial herb, up to 300 mm tall. Stems greyish tomentulose. Leaves semisucculent, 20–30 $\times$ 18–30 mm. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube curved, 7–10 mm long. *Flowers mauve; December*. Dry bushveld on dolomite formation, in rock crevices in full sun. *Van Jaarsveld 7052*.

W S C N E

ecklonii Benth.

Soft erect shrub, 0.7–2.5 m high. Leaves 60–170 $\times$ 40–100 mm, undersurface with reddish brown gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube straight, 12–18 mm long, widening slightly towards throat. *Flowers pale blue or mauve to bluish purple, rarely white or pink; March*. Forest margins or wooded streambanks. *Nel 367*.

W S C N E

esculentus N.E. Br.

(= *P. floribundus* N.E. Br.,
= *Coleus esculentus* (N.E. Br.) G. Taylor)

Herb, 0.6–1.2 m high, with tuberous edible rootstock. Stem without bristles. Flowers in pseudoracemes terminally as well as from upper nodes of leafless stems. Corolla 14–16 mm long. *Flowers yellow; August to October*. Dry wooded country. *Holt 323*.

W S C N E

fruticosus L'Hér.

(= *P. galpinii* Schltr.)

Soft shrub, 0.6–2.0 m high. Leaves 40–140 $\times$ 35–110 mm, undersurface dotted with minute honey-coloured

gland-dots. Calyx with occasional multicellular hairs; mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube 5–13 mm long, upper lip 2.5–6.0 mm long. *Flowers bluish mauve, rarely pink or pale blue, speckled with purple on upper lip; July to June.* Forest, scrub forest and shady places among rocks. *Codd 8183.*

W S C N E

grallatus Briq.

(= *P. transvaalensis* Briq.)

Herb, 0.4–1.5 m high. Leaves 50–160 × 35–140 mm, thin-textured, apex acute, base abruptly cuneate, margin with coarse teeth often bearing small secondary teeth, undersurface dotted with minute red gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. *Flowers white with flush of pink and a few spots on upper lip; November to April.* In forest and scrub forest and among rocks in shady places. *Codd 9546.*

W S C N E

grandidentatus Gürke

Procumbent, semisucculent perennial herb. Leaves deeply dentate, densely tomentose. Flowers in dense verticils, (3–)4–12 to each bract scar. Mature calyx glabrous in throat; fruiting calyx gibbous ventrally. Corolla 7–13 mm long. *Flowers white, rarely purple; January to May.* Dry, rocky places in open woodland. *Van Jaarsveld 2070.*

W S C N E

hadiensis (Forssk.) Schweinf. ex Spreng. var. **hadiensis**

(= *P. zatarhendi* sensu E.A. Bruce var. *zatarhendi* sensu Codd)

Erect to decumbent, semisucculent perennial herb, 0.3–0.6 m high. Leaves 35–80 × 20–55 mm, densely tomentose on both surfaces, shallowly crenate-dentate. Inflorescence 80–300 mm long, simple or with a pair of branches near base. Mature calyx glabrous in throat; fruiting calyx gibbous ventrally. *Flowers shades of mauve to purple, rarely white; January to April.* Among rocks in dry woodland or on exposed rocky places in grassland. *Van Jaarsveld 2052.*

W S C N E

hadiensis (Forssk.) Schweinf. ex Spreng. var. **tomentosus** (Benth.) Codd

(= *P. tomentosus* Benth.,

= *P. zatarhendi* sensu E.A. Bruce var. *tomentosus* (Benth.) Codd)

Erect to decumbent, semisucculent perennial herb, up to 1.5 m high. Leaves 40–100 × 32–100 mm, densely tomentose on both surfaces, shallowly to distinctly crenate-dentate. Inflorescence 200–600 mm long, usually with 1 or 2 pairs of branches near base. Calyx as in var. *hadiensis*. *Flowers shades of mauve to purple, rarely white; November to May.* Dry woodland and rocky grassland. *Onderstall 1335.*

W S C N E

hadiensis (Forssk.) Schweinf. ex Spreng. var. **woodii**

(Gürke) Codd

(= *P. woodii* Gürke,

= *P. zatarhendi* sensu E.A. Bruce var. *woodii* (Gürke) Codd)

Decumbent or suberect, semisucculent perennial herb. Leaves (30–)35–60 × 25–50 mm, sparingly to fairly densely strigose, shallowly to distinctly crenate-dentate. Inflorescence 100–350 mm long, simple or with a pair of branches near base. Calyx as in var. *hadiensis*. *Flowers shades of mauve to purple, rarely white; December to April.* Among rocks in thorn scrub and dry woodland. *Van Jaarsveld 1282.*

W S C N E

hereroensis Engl.

(= *P. myrianthus* Briq.)

Annual or weakly perennial herb, up to 1 m high. Leaves 40–70(–90) × 35–60(–70) mm, thin-textured, undersurface subglabrous to sparingly pubescent. Mature calyx subequally 5-toothed. Flowers in pedunculate decussate cincinni. *Flowers pale to deep blue, rarely white; March to December.* South-facing and wooded hillsides. *Scheepers 972.*

W S C N E

laxiflorus Benth.

Perennial herb or shrub, 0.7–1.5 m high. Leaves herbaceous, 60–100 × 40–60 mm, regularly crenate-dentate, cordate. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube curved, 12–14 mm long, like miniature 'Dutchman's pipe'. *Flowers whitish to pale mauve with 4 or 5 purple vertical lines on upper lip; October to July.* Forest margins and on shady streambanks. *Scheepers 170.*

W S C N E

madagascariensis (Pers.) Benth. var. **madagascariensis**

(= *P. hirtus* Benth.)

Decumbent to procumbent, semisucculent perennial herb. Leaf blade 15–40(–45) × 12–35(–40) mm, sparingly to densely short tomentose, crenate-dentate. Mature calyx glabrous in throat; fruiting calyx gibbous ventrally. Corolla 7–18 mm long. *Flowers white, rarely mauve or bluish; February to March.* Dry woodland and bush, among rocks or in sandy soil. *Van Jaarsveld 1073.*

W S C N E

madagascariensis (Pers.) Benth. var. **ramosior** Benth.

Erect to decumbent, semisucculent perennial herb, 200–350 mm tall. Leaves 25–40 mm long, crenate-dentate. Calyx as in var. *madagascariensis*. Corolla 8–12 mm long. *Flowers mauve or bluish, rarely white; November to May.* In grass among rocks. *Van Vuuren 530.*

W S C N E

mutabilis Codd

Procumbent, semisucculent perennial herb. Leaves 15–50 × 15–50 mm, deeply and coarsely crenate-scalloped, medium to densely strigose. Mature calyx glabrous in throat; fruiting calyx gibbous ventrally.

Corolla 8–12 mm long. *Flowers blue, purple-blue or lilac; January to May*. Rocky hillsides often in semishade. *Codd & Dyer 9040*.

W S C N E

neochilus Schltr.

(= *Coleus neochilus* (Schltr.) Codd)

Decumbent to erect, succulent perennial or annual herb, 120–500 mm tall. Leaves obovate to elliptic-ovate, 20–50 × 15–35 mm. Inflorescence elongate, 70–150 mm long, with 5–12 spaced fruiting verticils below flowers. Bracts forming conspicuous 4-angled coma at apex of inflorescence. Mature calyx villous in throat. Corolla 10–20 mm long. *Flowers mauve-purple; upper lip bluish white; July to June*. Under trees in open woodland and among rocks in grassland. *Codd 9531*.

W S C N E

ornatus Codd*

(= *Coleus comosus* Hochst. ex Gürke)

Decumbent to trailing, succulent perennial herb. Leaves obovate to broadly obovate, 20–30 × 15–25 mm. Inflorescence compact, 30–50(–90) mm long, with 1 or 2, rarely more, spaced fruiting verticils below flowers. Bracts forming conspicuous 4-angled coma at apex of inflorescence. Mature calyx villous in throat. Corolla 20–25 mm long. *Flowers bluish mauve with purple mottling on upper lip; January and April to May*. Among rocks in semishade. Native to North and Central Africa. *Codd 8238*.

W S C N E

petiolaris E. Mey. ex Benth.

(= *P. kuntzei* Gürke)

Perennial herb, up to 1 m high. Leaves broadly ovate-deltoid, 40–140 × 35–110 mm, coarsely dentate, truncate at base. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous. Corolla tube curved, 7–10 mm long; like a miniature 'Dutchman's pipe'. *Flowers deep violet-purple, often with bluish tips; February to May*. Shady places in moist areas and among rocks. *Van Jaarsveld 1094*.

W S C N E

rubropunctatus Codd

Erect or procumbent, perennial herb or shrub, up to 2 m high. Leaves usually thick-textured, base truncate, shortly attenuate or markedly decurrent on petiole, margin regularly crenate, undersurface dotted with minute red gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous. Corolla tube shorter than 10 mm. *Flowers white, scarcely or noticeably flushed with pinkish mauve; December to August*. In forest, scrub forest or in shady places among rocks or grass. *Kluge 472*.

W S C N E

spicatus E. Mey. ex Benth.

(= *P. subspicatus* Hochst.)

Decumbent, succulent perennial herb. Leaves obovate, 25–50 × 8–25 mm, semisucculent. Inflorescence sub-

spicate. Flowers in loose clusters. Mature calyx subequally 5-toothed. Corolla 7–8 mm long, subglabrous. *Flowers purple; March to July*. Dry woodland, rocky places or brackish flats. *Codd 6500*.

W S C N E

strigosus Benth.

(= *P. kuntzeanus* Domin,

= *P. parviflorus* Gürke)

Decumbent to ascending, semisucculent perennial herb. Young stems, petioles and leaves greyish to rusty strigose. Leaves 13–35 × 8–30 mm, undersurface dotted with minute red gland-dots. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube shorter than 10 mm, narrowed near throat, lips 3–5 mm long. *Flowers whitish to mauve with a few darker markings on upper lip; November to April*. Shady rocky places and scrub forest. *Van Jaarsveld 287*.

W S C N E

swynnertonii S. Moore

Spreading to ascending perennial herb, 0.40–0.75 m high. Leaves 50–150 × 45–140 mm, margin with few (6–14) pairs of large teeth 8–10 mm long which bear small secondary teeth. Flowers in 1–3-flowered sessile cymes. Mature calyx glabrous in throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube shorter than 10 mm. *Flowers white flushed with mauve-pink and with a few purple dots on upper lip, fringed with white hairs; August to September and January to April*. In moist humus-rich soil in mountain forests. *Codd 8388*.

W S C N E

tetensis (Baker) Agnew

(= *Coleus tetensis* Baker,

= *C. vagatus* E.A. Bruce)

Procumbent, semisucculent perennial herb. Leaves ovate to obovate, 15–25 × 12–20 mm, undersurface with orange-red gland-dots. Bracts rounded at apex, subpersistent. Mature calyx villous in throat. *Flowers mauve-purple; December to August*. Dry thorn-scrub on brackish flats. *Van der Schijff 3020*.

W S C N E

tetragonus Gürke

(= *Coleus tetragonus* (Gürke) Robyns & Lebrun)

Annual herb, 0.3–0.6 m high. Stems with conspicuous bristles. Flowers in pseudoracemes borne terminally as well as from upper nodes of usually leafless stems. *Corolla 4–5 mm long, yellow; April to May*. Sandy soil in dry woodland. *Van Jaarsveld 3326*.

W S C N E

verticillatus (L.f.) Druce

(= *P. nummularius* Briq.,

= *Ocinum verticillatum* L.f.)

Procumbent to ascending, semisucculent perennial herb. Young stems and petioles subglabrous to pubescent. Leaves 16–40 × 12–40 mm, undersurface dotted with minute red gland-dots. Mature calyx glabrous in

throat; fruiting calyx enlarged but not gibbous ventrally. Corolla tube shorter than 10 mm, scarcely narrowed near throat, lips 5–7 mm long. *Flowers white to pale mauve with a few mauve spots on upper lip or freely speckled with purplish spots; November to June.* Moist, stony places in forest margins, scrub forest and dry woodland. *Van Jaarsveld 336.*

W S C N E

xerophilus Codd

Shrub, 1,0–1,7 m high, with long horizontal tuberous roots. Flowers in 10–20-flowered sessile cymes. Inflorescence branches slender, up to 350 mm long, peduncle up to 300 mm long. Mature calyx subequally 5-toothed. *Flowers violet to mauve-purple; January to June.* Hot, dry, rocky slopes. *Codd 10020.*

W S C N E

Pycnostachys Hook. (s. Afr.: 3 spp.) 7347000

Codd. 1985. F.S.A. 28,4: 131–134.

reticulata (E. Mey.) Benth.

(= *P. purpurascens* Briq.)

Erect herb, 0,2–2,0 m high. Leaves sessile or subsessile, linear to lanceolate or narrowly elliptic. Calyx teeth 4–6 mm long. Corolla 8–18 mm long. *Flowers pale blue or sky blue to pale mauve or pinkish or almost white; November to June.* Moist grassy places. *Acocks 23576.*

W S C N E

urticifolia Hook.

(= *P. pubescens* Gürke)

Soft shrub or herb, 1,0–2,5 m high. Leaves petiolate (petioles of lower leaves 10–40 mm long), blade ovate-lanceolate to broadly ovate. *Flowers gentian-blue or rarely whitish; November to December and March to August.* Moist places, grassy streambanks or forest margins. *Van Vuuren 1192.*

W S C N E

Rabdosiella Codd (s. Afr.: 1 sp.) 7350030

Codd. 1985. F.S.A. 28,4: 175.

calycina (Benth.) Codd

(= *Plectranthus calycinus* Benth.,
= *Rabdosiella calycina* (Benth.) Codd)

Shrub, 0,6–1,5 m high. Leaves often ternate. Bracts leaf-like, becoming progressively smaller towards apex of inflorescence. Mature calyx erect, tubular and distinctly 10-nerved. Corolla saccate at base. *Flowers white to cream, flushed with mauve on lips; November to June.* Mountain grassland; often along streams. *Codd 9433.*

W S C N E

Salvia L. (s. Afr.: 27 spp.)

7290000

Codd. 1985. F.S.A. 28,4: 79–101.

aurita L.f. var. aurita

(= *S. lasiostachys* Benth.,
= *S. pallidiflora* Skan)

Perennial herb, up to 1,2 m high. Leaves simple or with tendency towards indistinct basal lobing, ovate. Upper lip of calyx 2- or 3-toothed, distinct and spreading, calyx enlarging to 10 mm in fruit. Upper lip of corolla straight. *Flowers pale blue, lilac, white or pinkish; January to March.* On grassy slopes, streambanks and wooded places. *Scheepers 1109.*

W S C N E

aurita L.f. var. galpinii (Skan) Hedge

(= *S. galpinii* Skan)

Perennial herb, up to 1,2 m high. Leaves pinnatifid with distinct basal lobes, oblong to broadly oblong in outline. Calyx and corolla as in var. *aurita*. *Flowers pale blue, lilac, white or pinkish; December.* Pott 15113.

W S C N E

coccinea Etl.*

(= *S. coccinea* Etl. var. *pseudococcinea* (Jacq.) Gray)

Soft shrub, 0,6–1,5 m high. Upper lip of calyx entire, consisting of a single ovate tooth. Corolla 20–30 mm long. *Flowers scarlet to pink; November to July.* Garden escape, in warm, moist parts. Native to America. *Scheepers 41.*

W S C N E

disermas L.

(= *S. rugosa* Aiton)

Perennial herb or shrub, 0,3–1,0(–1,2) m high. Lower stem indumentum with numerous capitate glandular hairs. Leaves broadly ovate to oblong-lanceolate, rugose, scabrid, glandular-pubescent. Upper lip of calyx 2- or 3-toothed, mature calyx 10–15 mm long. Corolla 15–30 mm long, upper lip falcate. Verticils 6–8-flowered. *Flowers whitish, pale blue or mauve; November to May.* Sandy soil in watercourses, limestone formations and rocky hillsides, along roadsides and waste places. *Germishuizen 3950.*

W S C N E

dolomitica Codd

Shrub, 1–2 m high. Leaves densely greyish appressed tomentose on both surfaces, margins entire. Calyx pilose, fruiting calyces up to 25 mm long. Corolla shorter than 30 mm. *Flowers light pink or lilac with cream or yellow markings on lower lip; July to June.* On dolomitic outcrops. *Rauh & Schlieben 9658.*

W S C N E

radula Benth.

Perennial herb, 0,30–0,75 m high. Lower stem indumentum without capitate glandular hairs. Leaves broadly ovate to oblong-ovate, rugose and subglabrous above, densely white-lanate beneath. Verticils 6–8-flowered. Upper lip of calyx 2- or 3-toothed, mature calyx 10–15 mm long. Corolla 15–30 mm long, upper lip of corolla falcate. *Flowers white or pale mauve to blue; September to May.* Riverbanks, surface limestone

and dolomitic wooded slopes, spreading along roads and overgrazed veld. *Acocks 12378*.

W S C N E

reflexa Hornem.*

Annual herb, 0,50–0,75 m high. Leaves lanceolate to linear-lanceolate, 30–60 × 5–10 mm. Upper lip of calyx entire, consisting of a single ovate tooth. Corolla up to 8 mm long. *Flowers blue; December to March*. Weed of waste places. Native to North America. *Hanekom 1718*.

W S C N E

repens Burch. ex Benth. var. **repens**

(= *S. woodii* Gürke)

Perennial herb, 0,25–0,60(–0,80) m high. Leaves elliptic to obovate, simple to runcinate, sparsely to freely gland-dotted. Upper lip of calyx 2- or 3-toothed, spreading, fruiting calyces 7–13 mm long. Corolla 14–20 mm long, upper lip of corolla straight. *Flowers pale blue or mauve to purple, rarely white; October to February and in May*. Mountain grassland, riverbanks, in open woodland, sometimes a weed in gardens or disturbed places. *Codd 10415*.

W S C N E

repens Burch. ex Benth. var. **transvaalensis** Hedge

Perennial herb, 0,25–0,60(–0,80) m high. Leaves narrowly oblong, simple, densely gland-dotted. Calyx and corolla as in var. *repens* but corolla 10–15 mm long. *Flowers pale blue or mauve to purple, rarely white; October to April*. Grassland. *Acocks 21023*.

W S C N E

runcinata L.f.

(= *S. sisymbriifolia* Skan)

Perennial herb, 150–500 mm tall. Stems with distinct indumentum of short to long eglandular hairs. Leaves runcinate-pinnatifid to lyrate, oblong-lanceolate to obovate in outline. Upper lip of calyx 2- or 3-toothed, spreading; fruiting calyces 4–7 mm long. Corolla 7–14 mm long, upper lip of corolla straight. *Flowers white or pale blue to mauve or purplish; August to April*. On heavy soils, sometimes disturbed places or overgrazed veld. *Devenish 1853*.

W S C N E

stenophylla Burch. ex Benth.

(= *S. chlorophylla* Briq.,
= *S. pallida* Dinter ex Engl.)

Perennial herb, 200–400 mm tall. Stems almost glabrous, with few scattered eglandular hairs. Leaves pinnatifid or pinnatisect, occasionally simple, linear-oblong to oblong-lanceolate in outline. Upper lip of calyx 2- or 3-toothed, spreading, calyx 4–7 mm long. Upper lip of corolla straight, 7–14 mm long. *Flowers pale blue or mauve; October to April*. Grassland, open woodland, semi-arid shrub, sometimes weed of disturbed places. *Morris & Boucher 233a*.

W S C N E

tiliifolia Vahl*

Annual herb, 0,4–0,6 m high. Leaves ovate, 40–60 × 35–50 mm. Upper lip of calyx entire, consisting of a single ovate tooth. Corolla up to 8 mm long. *Flowers blue; April to June*. Weed of gardens and waste places. Native to South America. *Codd 10737*.

W S C N E

verbenaca L.

(= *S. clandestina* L. var. *angustifolia* Benth.,
= *S. clandestina* L. var. *clandestina*)

Perennial herb, 150–400 mm tall. Upper lip of calyx with 3 closely connivent short teeth, mature calyx 7–9 mm long. Corolla 8–12 mm long, upper lip of corolla straight or slightly falcate. *Flowers light blue to purple; September and March*. Disturbed places. *Zambatis 158*.

W S C N E

Satureja L. (s. Afr.: 4 spp.)

7305000

Codd. 1985. F.S.A. 28,4: 103–106.

biflora (Buch.-Ham. ex D. Don) Briq.

(= *Micromeria biflora* (Buch.-Ham. ex D. Don) Benth.)

Perennial herb, 0,2–0,6 m high. Stems wiry, erect to spreading. Leaves with apex acute to obtuse, margin thickened. Flowers in several-many-flowered, pedunculate cymes, rarely solitary. Calyx tubular. *Flowers white or pale mauve; August to May*. On rock slopes or moist places with grasses and scattered bush. *Germishuizen 3845*.

W S C N E

Scutellaria L. (s. Afr.: 1 sp.)

7234000

Codd. 1985. F.S.A. 28,4: 16–17.

racemosa Pers.*

Perennial herb, 150–300 mm tall. Stems quadrangular. Leaves petiolate, lanceolate to lanceolate-hastate, gland-dotted beneath. Inflorescence slender, lax, 5–12 mm long. *Flowers violet to red or white with purple spots; October to January*. On riverbanks and moist places. Native to South America. *De Winter sub PRE 29791*.

W S C N E

Solenostemon Thonn. (s. Afr.: 2 spp.) 7354000

Codd. 1985. F.S.A. 28,4: 179–181.

latifolius (Hochst. ex Benth.) J.K. Morton

(= *Coleus latifolius* Hochst. ex Benth.,
= *C. rehmannii* Briq.)

Semi-erect to procumbent perennial herb. Roots fibrous. Corolla 8–15 mm long. *Flowers with lower lip violet to purple, upper lip paler; July to June*. Forest margins and open woodland among rocks. *Codd 7915*.

W S C N E

rotundifolius (Poir.) J.K. Morton

(= *Coleus dysentericus* Baker,
= *C. rotundifolius* (Poir.) A. Chev. & Perrot)

Ascending to decumbent perennial herb. Roots tuberous, potato-like. Corolla 5–7 mm long. *Flowers with upper lip whitish, lower lip pale bluish mauve; April and May.* Cultivated for edible roots. *Scheepers 931.*

W	S	C	N	E
---	---	---	---	---

Stachys L. (s. Afr.: 42 spp.)

7281000

Codd. 1985. F.S.A. 28,4: 51–78.

aethiopica L.

(= *S. attenuata* Skan,
= *S. capensis* Presl)

Decumbent or ascending perennial herb. Leaves broadly ovate to ovate-deltoid, 8–35(–60) × 6–25(–35) mm, sparingly hispid. Rachis finely glandular-tomentose. Verticils 4–6-flowered. *Flowers white or pink to deep mauve, usually with purplish flecks on lower lip; February and May.* Mountain grassland. *Van Jaarsveld 506.*

W	S	C	N	E
---	---	---	---	---

arachnoidea Codd

Procumbent to subscentent perennial herb. Leaves broadly ovate-deltoid to subrotund, discolorous, sparingly pubescent and greenish brown above, white tomentose and freely dotted with yellowish gland-dots beneath. Verticils all 2-flowered. Calyx villous. Corolla tube shorter than 12 mm. *Flowers white with mauve-purple upper lip and speckled lower lip; October to May.* Moist places in forest margins and grassy slopes of mountains. *Scheepers 729.*

W	S	C	N	E
---	---	---	---	---

burchelliana Launert

(= *S. burchellii* Benth.)

Shrub, 0.4–1.2 m high. Leaves lanceolate to oblong-lanceolate, 25–50 × 5–10 mm, densely grey stellate-felted, margin serrulate-crenulate, often somewhat obscurely. Verticils 6–10-flowered. Calyx 2-lipped, densely stellate-floccose. *Flowers yellow; February.* Dry rocky hillsides and sandy soil overlying calcareous formations. *Wilman 1257.*

W	S	C	N	E
---	---	---	---	---

caffra E. Mey. ex Benth.

Soft shrub, 1–3 m high. Leaves lanceolate, stellate pubescent, serrate. Calyx thinly and minutely stellate-tomentulose. *Flowers white, cream or greenish yellow; December to May.* Forest margins and shady stream-banks. *Codd 10011.*

W	S	C	N	E
---	---	---	---	---

cymbalaria Briq.

(= *S. aethiopica* L. var. *tenella* Kuntze,
= *S. cymbalaria* Briq. var. *alba* Skan)

Prostrate perennial herb. Leaves broadly ovate-deltoid to suborbicular, subglabrous to thinly appressed-pu-

bescent or glandular-puberulous. Verticils 2-flowered. Calyx puberulous to hispidulous. *Flowers purple, pink or white; April.* Among rocks in exposed mountain grassland. *Balkwill 1466.*

W	S	C	N	E
---	---	---	---	---

erectiuscula Gürke

(= *S. erectiuscula* Gürke var. *natalensis* Skan)

Perennial herb, 250–500 mm tall. Stem retrorse-hispid to scabrid. Leaves oblong-deltoid to ovate-deltoid, petiolate, sparingly hispid. Verticils 3–10-flowered. *Flowers white; November to January.* Grassland. *Galpin 13099.*

W	S	C	N	E
---	---	---	---	---

graciliflora Presl

(= *S. cooperi* Skan)

Decumbent or subscentent perennial herb. Leaves ovate, cordate, large, 20–65 mm long and 14–50 mm broad, sparingly hispid or pilose beneath. Rachis shortly retrorse-pubescent, not glandular. Inflorescence of 1–4 verticils, compact to subcapitate. *Flowers white, sometimes with mauve spots on lower lip; January to August.* Moist places in forest margins or in grass. *Elan-Puttick 326.*

W	S	C	N	E
---	---	---	---	---

grandifolia E. Mey. ex Benth.

Straggling perennial herb, up to 1 m high. Leaves broadly ovate, 35–80 mm long and 28–65 mm broad, base cordate, densely and softly hairy beneath, petiolate. Upper bracts scarcely longer than calyx. Calyx densely covered with short hairs, calyx teeth narrow, 6 mm long; *Flowers white with mauve spots on lower lip; November to May.* Forest margins and along mountain streams. *Devenish 640.*

W	S	C	N	E
---	---	---	---	---

hyssopoides Burch. ex Benth.

Erect or decumbent perennial herb, 0.2–0.6 m high. Leaves linear to oblong-lanceolate, usually entire, glabrous to thinly stellate-pubescent. Calyx thinly to densely grey stellate-tomentulose. *Flowers pink or mauve, often with darker flecks, to purple; July and October to January.* In depressions or on riverbanks in clay. *Codd 4463.*

W	S	C	N	E
---	---	---	---	---

kuntzei Gürke

(= *S. petrogenes* Briq.)

Decumbent or ascending perennial herb, 0.45–1.00 m high. Leaves broadly ovate, 35–70 mm long, 25–50 mm broad, base cordate, densely appressed-tomentose on both surfaces, sessile above, petiolate below. Calyx teeth narrow, up to 2 mm long. *Flowers white or tinged with mauve; November to February.* In grass among rocks and on sandstone ledges in mountain grassland. *Henrici 227.*

W	S	C	N	E
---	---	---	---	---

natalensis Hochst. var. **natalensis**

(= *S. leptoclada* Briq.,
= *S. transvaalensis* Gürke)

Decumbent to straggling perennial herb. Pubescence on stem, leaves and calyx sparingly villous to shortly scabrid or tomentose. Leaves ovate to ovate-deltoid. Verticils all 2-flowered. *Flowers white with a few lilac markings on lower lip; October to June.* Semishady kloofs and wooded places in mountains; sometimes grassland on stony hillsides. *Jacobsen 1766.*

W	S	C	N	E
---	---	---	---	---

natalensis Hochst. var. **galpinii** (Briq.) Codd

(= *S. galpinii* Briq.)

Erect or decumbent to straggling perennial herb, 120–200 mm tall. Pubescence on stem, leaves and calyx densely villous. Leaves and verticils as in var. *natalensis*. *Flowers white with a few lilac markings on lower lip; July to April.* In dense grass, often among rocks. *Codd 8063.*

W	S	C	N	E
---	---	---	---	---

nigricans Benth.

Perennial herb, 0.4–1.2 m high. Stem hispid to villous. Leaves oblong-lanceolate to linear-lanceolate, 30–60 × 3–10 mm, strigose, sessile or subsessile. Verticils 3–10-flowered. *Flowers white, occasionally speckled or tinged with pink or mauve; October to January.* In grassland in mountains. *Codd 8122.*

W	S	C	N	E
---	---	---	---	---

rehmannii Skan

Procumbent perennial herb. Leaves ovate, cordate. Pubescence of greyish brown stellate hairs. *Flowers white to rosy with purplish blotch in throat; November to July.* Among rocks in mountain grassland. *Codd & Dyer 9022.*

W	S	C	N	E
---	---	---	---	---

reticulata Codd

Decumbent to procumbent perennial herb. Stems with appressed retrorse hairs. Leaves ovate-deltoid to broadly ovate or subreniform, undersurface densely and softly tomentose, reticulate-veined. Verticils 3–10-flowered. *Flowers white to pale mauve; July to June.* Among rocks in exposed situations in mountain grassland. *Van der Schijff 4456.*

W	S	C	N	E
---	---	---	---	---

sessilis Gürke

Perennial herb, 0.15–1.00 m high. Leaves sessile or lower ones shortly petiolate, deltoid-lanceolate or oblong-lanceolate to oblong or ovate-deltoid, rounded to subtruncate at base, strigose. Verticils 3–10-flowered. Calyx densely hispid-villous. *Flowers white usually with purplish spots on lower lip; November to January.* Dense grassland, usually subjected to frequent burning. *Devenish 1570.*

W	S	C	N	E
---	---	---	---	---

simplex Schltr.

(= *S. chrysotrichos* Gürke,
= *S. pascuicola* Briq.)

Decumbent to semiprostrate perennial herb. Stems villous. Leaves ovate, ovate-oblong to ovate-lanceolate, base rounded, thick-textured, densely appressed villous above, placed mainly near base of stem. Verticils 3–10-flowered. *Flowers white to mauve; November to March.* Mountain grassland subject to frequent burning, usually on stony slopes. *Codd 8136.*

W	S	C	N	E
---	---	---	---	---

spathulata Burch. ex Benth.

(= *S. minima* Gürke,
= *S. pachycalamna* Briq.)

Perennial herb or shrublet, 80–250(–300) mm tall. Leaves linear, linear-spathulate or linear-oblong to rarely obovate-elliptic, densely greyish white stellate-felted. Verticils 2(–4)-flowered. Calyx densely and shortly grey stellate-tomentose. *Flowers pink, mauve or rosy mauve; October to April.* On heavy soils in depressions, on riverbanks or in watercourses under arid to semi-arid conditions. *Scheepers 1500.*

W	S	C	N	E
---	---	---	---	---

Syncolostemon E. Mey. ex Benth.

(s. Afr.: 10 spp.) 7359000

Codd. 1985. F.S.A. 28,4: 185–191.

concinus N.E. Br.

Herb, 0.6 m high. Corolla tube 8–9 mm long. Pubescence on leaves of stellate hairs. *Flowers white; December to May.* Mountain grassland, among rocks. *Germishuizen 3921.*

W	S	C	N	E
---	---	---	---	---

eriocephalus I. Verd.

Shrub, 0.6–2.0 m high. Leaves grey, densely sericeous, 4–10 × 1.5–3.0 mm, margin revolute. Inflorescence terminal or on short lateral shoots, dense, densely villous. Corolla tube 5–7 mm long. *Flowers cream, yellow or brownish yellow; July to February.* Shallow sandy soil among quartzite rocks. *Codd 10314.*

W	S	C	N	E
---	---	---	---	---

parviflorus E. Mey. ex Benth. var. **parviflorus**

Soft shrub or herb, 0.4–1.0 m high. Leaves hispidulous to fairly densely appressed pubescent, obovate or elliptic to lanceolate, up to 3 times as long as broad. Inflorescence lax, verticils up to 20 mm apart. Corolla tube 7–9 mm long. *Flowers white or flushed with pink, rarely reddish pink; September and January to March.* Dense grassland, often among rocks. *Codd 9530.*

W	S	C	N	E
---	---	---	---	---

Tetradenia Benth. (s. Afr.: 3 spp.) 7339000

Codd. 1985. F.S.A. 28,4: 113–116.

brevispicata (N.E. Br.) Codd(= *Iboza brevispicata* N.E. Br.)

Small tree or shrub, 0.6–2.0(–3.0) m high. Leaves ovate-rotund, 12–30 × 10–30 mm (occasionally larger), undersurface finely velvety with sessile glands. Male flower spikes 10–20 mm long. Bracts broader than long, rounded or abruptly apiculate at apex. *Flowers white to mauve; April to January.* On dry, wooded, rocky slopes. *Van Wyk 5216.*

W S C N E

riparia (Hochst.) Codd(= *Iboza riparia* (Hochst.) N.E. Br.,
= *I. galpinii* N.E. Br.)

Small tree or shrub, 1–3(–5) m high. Leaves ovate-oblong to rotund, 35–80 × 35–70 mm, undersurface sparsely to densely pubescent with stalked glands and/or multicellular hairs. Male flower spikes 20–80 mm long. Bracts broader than long, rounded or abruptly apiculate at apex. *Flowers white to mauve; February to October.* Wooded hillsides and streambanks. *Galpin 9724.*

W S C N E

Teucrium L. (s. Afr.: 3 spp.)

7212000

Codd. 1985. F.S.A. 28,4: 8–11.

trifidum Retz.(= *T. capense* Thunb.)

Undershrub, 0.3–1.1 m high. Leaves ± deeply 3-fid or 3-lobed. Peduncles 3–7-flowered. Cymes often as long as or longer than internode. *Flowers white; October to April.* In dry woodland under thorn trees or in bush groups, particularly on overgrazed or disturbed areas. *Scheepers 1442.*

W S C N E

Thorncroftia N.E. Br. (s. Afr.: 4 spp.) 7367010

Codd. 1985. F.S.A. 28,4: 237–239.

Codd. 1986. Bothalia 16,1: 52–53.

longiflora N.E. Br.

Small soft shrub or herb, semisucculent, 0.3–0.6 m high. Pubescence consisting of simple or multicellular, not dendroid, hairs. Corolla tube 30–38 mm long. *Flowers pink to mauve-pink with deeper flecks on lateral lobes; March to April.* Rocky hillsides. *Clarke & Thorncroft sub PRE 625706.*

W S C N E

media Codd

Semisucculent shrub, up to 0.6 m high. Pubescence consisting of simple hairs. Leaves elliptic to ovate-elliptic, 35–65 × 25–35 mm, margin subentire. Inflorescence up to 250 mm long. Corolla tube 20–22 mm

long. *Flowers lilac with lobes purple-flecked; April.* On rocky slopes. *Hardy 3966.*

W S C N E

succulenta (R.A. Dyer & E.A. Bruce) Codd(= *Plectranthus succulentus* R.A. Dyer & E.A. Bruce)

Soft shrub or herb, semisucculent, 0.6–1.2 m high. Pubescence consisting of dendroid hairs, mixed with simple and multicellular hairs. Leaves ovate-elliptic to obovate, 16–30 × 15–20 mm, margin crenate in upper two-thirds. Inflorescence 80–140 mm long, congested. Corolla tube 15–20 mm long. *Flowers bluish mauve with darker spots on upper lip and lateral lobes; February to July and in October.* Among rocks on mountains. *Codd 4194.*

W S C N E

thorncroftii (S. Moore) Codd(= *Plectranthus thorncroftii* S. Moore)

Semisucculent herb, 100–250 mm tall. Corolla tube 4.5–5.0 mm long. *Flowers whitish with purple spots; February to May.* Among rocks in mountain grassland. *Hardy 6396.*

W S C N E

Tinnea Kotschy ex Hook. f. (s. Afr.:

4 spp.)

7213000

Codd. 1985. F.S.A. 28,4: 12–15.

barbata Vollesen

Shrub, 2.8–4.0 m high. Petioles mostly longer than 10 mm. Mature calyx membranous. Corolla tube narrow, exceeding 10 mm long. *Flowers mauve to violet; November to March.* Riverine scrub and forest margins. *Buitendag 753.*

W S C N E

galpinii Briq.

Suberect or decumbent shrub. Stems softly woody, sparingly branched. Petioles shorter than 10 mm. Flowers 2 per verticil, borne on slender terminal racemes 80–200 mm long. Mature calyx coriaceous. Corolla tube broad, up to 9 mm long. *Flowers maroon to chocolate-coloured; December to March.* Among rocks in grassland on mountains. *Venter 9078.*

W S C N E

rhodesiana S. Moore(= *T. rehmannii* Schinz)

Soft shrub, 0.6–2.5 m high. Petioles shorter than 10 mm. Flowers usually 1 (occasionally 2) per verticil, borne on short lateral shoots as well as in short terminal racemes 50–100 mm long. Mature calyx coriaceous. Corolla tube broad, up to 9 mm long. *Flowers chocolate to purplish brown; September to March and in June.* Stony hillsides in dry open woodland. *Codd 6759.*

W S C N E

Lauraceae

Trees, shrubs or rarely twining, parasitic herbs. Leaves alternate, penninerved or digitately 3–5-nerved or scale-like. Flowers bisexual or unisexual. Perianth calycine, usually 6-lobed or -partite. Stamens usually 12. Ovary superior, ± surrounded or enclosed by receptacle, 1-locular. Fruit a berry, drupe or sometimes dry, indehiscent.

Key after Dyer, Gen 1: 163 (1975).

- 1a Parasitic, twining herbs with yellowish, thread-like stems and scale-like leaves; anthers 2-valved *Cassytha*
- 1b Trees or shrubs with well developed leaves 2
- 2a Flowers usually unisexual; anthers 4-valved; fruit seated on or in enlarged, cupular receptacle; leaves usually with some pits on underside in axils of lowest 1 or 2 pairs of nerves *Ocotea*
- 2b Flowers bisexual; anthers 2-valved; fruit completely enclosed in persistent, enlarged receptacle *Cryptocarya*

Cassytha *L.* (s. Afr.: 3 spp.) 2825000
Stapf. 1912. F.C. 5: 500–502.

filiformis *L.*
Twining parasite, forming a fairly dense cover on host plant. Stems leafless. Berries red. *Flowers yellowish green; February to May.* Mist belt scrub, woodland, riverine bush. Region of origin uncertain. *Stalmans 1035.*
W S C N E

Cryptocarya *R. Br.* (s. Afr.: 6 spp.) 2813000
Kostermans. 1938. Bull. Jard. bot. nat. Belg. 15: 94–108.

liebertiana *Engl.*
(= *C. siebertiana* Burt Davy,
= *C. transvaalensis* Burt Davy)
Tree, up to 25 m high. Branches olive-grey. Leaves pale green, stiff, papery, greyish underneath, ovate to oblong, 60–100 × 30–40 mm. *Flowers green; December to February.* Evergreen forests and woodland. *Bos 1129.*
W S C N E

woodii *Engl.*
(= *C. acuminata* Schinz)
Tree, up to 10 m high. Bark grey. Leaves ovate to broadly ovate, 15–80 × 15–40 mm, apex tapering to rounded, often abruptly attenuate, margin entire. *Flowers greenish white; October to December.* Woodland and forest. *Edwards 4294.*
W S C N E

Ocotea *Aubl.* (s. Afr.: 2 spp.) 2788000
Coates Palgrave. 1977. Trees of southern Africa: 176–177.

bullata (*Burch.*) *Baill.*
Tree, up to 30 m high. Leaves with large pits with ciliolate orifices in axils of lateral nerves below, corresponding with large, hollow tubercles on upper surface. Tepals glabrous or nearly so within. Forests. *Thompson sub PRE 53947.*
W S C N E

kenyensis (*Chiov.*) *Robyns*
(= *O. viridis* Kosterm.)
Tree, up to 15 m high. Leaves completely glabrous, without pits beneath. Tepals densely tomentellous within. Fruits like acorns. *Flowers green; May.* Forests. *Kruger 290.*
W S C N E

Lentibulariaceae

Herbs of wet or damp places, rooted or aquatic, mostly insectivorous. Leaves alternate or in rosettes, submerged leaves modified into bladder- or bottle-like pitchers with trap-doors for catching insects. Flowers irregular, 2-lipped and spurred. Petals 5, united. Stamens 2, arising from base of corolla. Ovary superior, 1-locular; stigma stalkless, 2-lobed. Fruit a many-seeded capsule.

Key after Taylor in F.Z. 8,3: 9 (1988).

- Calyx lobes 2 *Utricularia*
- Calyx lobes 5 *Genlisea*

Genlisea A. St.-Hil. (s. Afr.: 1 sp.) 7899000

Taylor. 1988. F.Z. 8,3: 38–42.

hispidula Stapf(= *G. hispidula* Stapf subsp. *hispidula*)

Terrestrial rosulate herb. Leaves spatulate, long-petiolate. Inflorescence not glandular. Ovary and capsule densely hispid, at least in upper part. Fruiting pedicel erect; scales on peduncle few. *Flowers violet, blue, mauve or pink with greenish or yellowish spur; August to April.* Seasonally or permanently wet grassland. Kluge 2539.

W S C N E

Utricularia L. (s. Afr.: 18 spp.) 7901000

Taylor. 1964. Kew Bull. 18,1: 135–143.

Taylor. 1986. Kew Bull. 41,1: 6.

Taylor. 1988. F.Z. 8,3: 9–38.

arenaria A. DC.(= *U. exilis* Oliv.,= *U. kirkii* Stapf)

Terrestrial herb. Bracts not produced below point of attachment. Bracteoles present, bracts not more than twice as wide as bracteoles and similar in shape. Corolla 3–9 mm long, inferior lip of corolla $\pm$ half as long as spur. *Flowers white or lilac with yellow spot on palate; January to May.* Marshes and swampy grassland and shallow sandy or peaty soil overlying rocks. Mauve 5047.

W S C N E

bisquamata Schrank(= *U. capensis* Spreng.,= *U. ecklonii* Spreng.)

Terrestrial herb. Bracts not produced below point of attachment. Bracteoles present, bracts $\pm$ as long as bracteoles and similar in shape. Spur $\pm$ as long as or rarely 1.5 times as long as lower lip, corolla 2–16 mm long. *Flowers pale lilac with yellow spot on palate or entirely white or yellow; September, March and June.* Wet mossy rocks on damp sand or mud. Esterhuysen 21466.

W S C N E

cymbantha Oliv.

Aquatic herb. Bracts not produced below point of attachment. Bracteoles absent. Inflorescence without whorl of inflated floats. Spur very short, saccate. Corolla 3–5 mm long. *Flowers white or cream; January.* Floating in shallow water. Doidge & Bottomley s.n., sub PRE 28973.

W S C N E

gibba L.(= *U. gibba* L. subsp. *gibba* & subsp. *exoleta* (R. Br.) P. Taylor,= *U. exoleta* R. Br.)

Aquatic or subaquatic herb. Bracts not produced below point of attachment. Bracteoles absent. Leaves with few bifurcations. Inflorescence 1–4-flowered, without

whorl of inflated floats. Spur well developed, corolla 4–25 mm long, not hairy outside. *Flowers yellow, often with brown or reddish nerves; October to June.* Shallow water and mud by ditches, streams and lakes. Obermeyer, Schweickerdt & Verdoorn 209.

W S C N E

livida E. Mey.(= *U. transrugosa* Stapf)

Terrestrial herb. Bracts not produced below point of attachment. Bracteoles present, bracts not more than twice as wide as bracteoles and similar in shape. Corolla 6–15 mm long, inferior lip of corolla $\pm$ two-thirds of to equal to or slightly longer than spur. *Flowers violet, mauve or white with yellow spot on palate or more rarely wholly yellow or cream; July to June.* Permanently or seasonally wet boggy grassland and shallow wet soil over rocks. Liebenberg 2803.

W S C N E

prehensilis E. Mey.

Terrestrial herb. Bracts not produced below point of attachment. Bracteoles present, bracts more than 4 times as wide as bracteoles and $\pm$ concealing them. Leaves linear to narrowly oblanceolate, 3- or more-nerved. Corolla 8–20 mm long, 4-carinate at base of inferior lip. Fruiting pedicels erect or spreading. *Flowers yellow; September to April.* Bogs, marshes and seasonally flooded ground at lakes and rivers. Reid 1179.

W S C N E

reflexa Oliv.(= *U. grandivesciculosa* Czech)

Aquatic herb. Bracts not produced below point of attachment. Bracteoles absent. Traps produced in angles of leaf bifurcations. Inflorescence without whorl of inflated floats. Spur well developed, corolla 3–15 mm long, hairy on outside. *Flowers pale to deep yellow, usually with brown or reddish nerves; April.* Deep or shallow still or flowing water. Van der Schijff 2850.

W S C N E

scandens Benj.(= *U. gibbsiae* Stapf)

Terrestrial herb. Bracts not produced below point of attachment. Bracteoles present, bracts more than 4 times as wide as bracteoles and $\pm$ concealing them. Leaves linear, with a single nerve. Fruiting pedicels erect or spreading. *Flowers yellow; December and April.* Boggy grassland or among mosses on wet rocks. Breyer 17918.

W S C N E

stellaris L.f.(= *U. inflexa* Forssk. var. *stellaris* (L.f.) P. Taylor)

Aquatic herb. Stolons and traps glabrous. Bracts not produced below point of attachment. Bracteoles absent. Inflorescence with whorl of inflated, narrowly ellipsoid floats, 2–4 times as long as broad. Lobes of fruiting calyx reflexed, exposing capsule. *Flowers yellow, usually with reddish lines on palate; February to August.*

Still and slow-flowing water in lakes, rivers and marshes. *Mauve 1065.*

W S C N E

subulata L.

Terrestrial herb. Bracts produced below point of attachment. Bracteoles absent. Fertile bracts circular or elliptic, amplexicaul. *Flowers yellow; February to April.* Wet peaty or sandy soil in grassland. *Hilliard & Burt 14376.*

W S C N E

welwitschii Oliv.

(= *U. welwitschii* Oliv. var. *welwitschii*)

Terrestrial herb. Margins of calyx lobes strongly incurved, densely papillose. Bracts not produced below point of attachment. Bracteoles present, bracts not more than twice as wide as bracteoles and similar in shape. Spur $\pm$ 1,5 times as long as inferior lip of corolla, corolla 6–15 mm long. *Flowers violet with yellow blotch on palate or sometimes wholly yellow; July to June.* Damp sandy or peaty grassland. *Repton 3573.*

W S C N E

LINACEAE

Herbs, shrubs or trees. Leaves opposite; stipules present, often gland-like. Flowers regular. Petals 5, free, twisted in bud. Stamens the same number or twice as many as petals; filaments united at base. Ovary superior, usually with 5 free styles. Fruit a capsule.

Key after Dyer, Gen. 1: 280 (1975).

Stamens 5; fruit capsular; annual or perennial herbs, rarely shrublets **Linum**
Stamens 10, all fertile; fruit drupaceous; woody plants **Hugonia**

Hugonia L. (s. Afr.: 1 sp.)

3947000

Robson. 1963. F.Z. 2: 91–96.

orientalis Engl.

(= *H. swynnertonii* De Wild.)

Shrub, often scrambling, or a small tree, up to 4 m high. Young branches pubescent. Leaves petiolate, lamina oblong or oblanceolate to obovate or elliptic, 25–116 $\times$ 10–35 mm. Drupe globose with thin yellow pericarp. *Flowers yellow; October to December.* Woodland, forest margins. *Van der Schijff 3344.*

W S C N E

Linum L. (s. Afr.: 14 spp.)

3945000

Rogers. 1981. Nord. J. Bot. 1: 711–722.

thunbergii Eckl. & Zeyh.

Perennial herb, up to 500 mm tall. Leaves linear to elliptic or ovate, 10–20 $\times$ 1–4(–8) mm, stipular glands present. Pedicels glabrous. Outer sepals entire or serrate. Styles separate. *Flowers yellow; November to March.* Grassland, hillsides. *Behr 979.*

W S C N E

LOBELIACEAE

Herbs, often with milky latex. Leaves alternate, without stipules. Flowers irregular, often 2-lipped, inverted because stalks twisted through 180°. Petals 5, united or separate. Stamens 5; anthers cohering into a tube around style. Ovary inferior; stigmas separate. Fruit a capsule, often crowned with persistent calyx lobes.

Key after Dyer, Gen. 1: 644 (1975).

1a Petals separate, free or partly cohering by their claws above base; capsule 2-locular, many-seeded **Cyphia**
1b Petals united 2
2a Lobes of stigma short, subrotund or oval **Lobelia**
2b Lobes of stigma filiform, elongate **Monopsis**

Cyphia P.J. Bergius (s. Afr.: 33 spp.) 8681000

Wimmer. 1952. Kew Bull. 2: 137–147.
Wimmer. 1968. Pflanzenreich 108: 935–1014.
Thulin. 1978. Bot. Notiser 131: 455–471.

assimilis Sond. var. assimilis

(= *C. persicifolia* Presl)

Erect, twining herb, up to 0,6 m high. Leaves linear, with scattered teeth. Flowers in distinct racemes. Stamens shorter than middle of corolla; anthers scarcely longer than filaments. *Flowers pink or mauve; January to April.* Grassland. *Hanekom 1809.*

W S C N E

corylifolia Harv.

Climbing herb. Leaves petiolate, broadly ovate, acute, cuneate at base, serrate-dentate, glabrous. Flowers disposed into an elongated, remote-flowered spike. *Flowering January*. Grassland. *Barnard & Mogg 727*.

W	S	C	N	E
---	---	---	---	---

elata Harv. var. **elata**

(= *C. gerrardii* Harv.,
= *C. wilmsiana* Diels)

Erect herb, up to 1 m high, hairy but leaves sometimes glabrous. Leaves sessile, oblong to ovate-lanceolate, 40–80 × 14–20 mm. Flowers 2–6 in dense, axillary spikes. *Flowers yellow to white; January to May*. Grassland, rocky slopes. *Retief 586*.

W	S	C	N	E
---	---	---	---	---

elata Harv. var. **glabra** Harv.

Erect, glabrous herb, up to 1 m high. Leaves sessile, ovate-oblong, 30 × 10 mm, base rounded. Flowers 2–6 in dense, axillary spikes. *Flowers cream or white with maroon or purple spots; January to March*. Grassland, open montane woodland, rocky situations. *Welman 483*.

W	S	C	N	E
---	---	---	---	---

elata Harv. var. **oblongifolia** (Sond. & Harv.) E. Phillips

Erect, minutely hairy herb, up to 500 mm tall. Leaves sessile, oblong, obtuse, apiculate, crenulate-toothed. Flowers 2–6 in dense, axillary spikes. *Flowers yellow or mauve; December to February*. Montane grassland, mountain sourveld. *Codd 5180*.

W	S	C	N	E
---	---	---	---	---

glabra E. Wimm.

Twiner, glabrous. Leaves adpressed denticulate, elliptic to oblong, 30–40 × 12–23 mm. Calyx lobes reflexed, ovate. Corolla ± 11 mm long. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

rogersii S. Moore subsp. **rogersii**

Slender twiner, up to 1 m high. Leaves shortly petiolate, minutely denticulate, lanceolate to linear-lanceolate. Rhachis of inflorescence glabrous. Corolla 11–14 mm long. Seeds alate, complanate, oval. *Flowers pale mauish pink or lilac; November to April*. Grassland. *Codd 8417*.

W	S	C	N	E
---	---	---	---	---

rogersii S. Moore subsp. **winteri** E. Wimm.

Twining, filiform herb. Leaves shortly petiolate, minutely denticulate, linear, ± 1–2 mm broad. Rhachis mostly puberulous. Corolla 9–11 mm long. *Flowers mauve or white; January to May*. Wiry grass among rocks. *Codd & Dyer 9051*.

W	S	C	N	E
---	---	---	---	---

stenopetala Diels

(= *C. bechuanaensis* Bremek. & Oberm.,
= *C. stenopetala* Diels var. *johannesburgensis* E. Wimm.)

Twining herb, up to 0.8 m high. Leaves sessile, linear to linear-lanceolate, 30–70 × 2–11 mm, apex mucronate, margin denticulate to serrate. Flowers in terminal racemes. Corolla 11–21 mm long. *Flowers pink, white with purple streaks; December to April*. Grassland, rocky hillsides. *Schlieben 8384*.

W	S	C	N	E
---	---	---	---	---

transvaalensis E. Phillips

Twining herb, up to 2 m high. Leaves petiolate, lower ones ovate, base rounded, upper leaves elliptic, 35 × 16 mm. Calyx lobes denticulate, patent to reflexed. Seeds scarcely winged, irregularly ovoid. *Flowers mauve; January to April*. Forest, thicket and bushland. *Scheepers 865*.

W	S	C	N	E
---	---	---	---	---

Lobelia L. (s. Afr.: 71 spp.)

8694000

Wimmer. 1953. *Pflanzenreich* 107: 408–695, 755–783.

Wimmer. 1968. *Pflanzenreich* 108: 855–889.

Thulin. 1983. *F.Z.* 7: 118–145.

Thulin. 1983. *Nord. J. Bot.* 3: 371–382.

anceps L.f.

(= *L. alata* Labill.,
= *L. repens* Thunb.)

Herb. Stems erect, prostrate or ascending, branched, winged. Cauline leaves linear-oblong, decurrent. Calyx lobes triangular, much shorter than cylindrical tube. *Flowers blue; November*. Lowveld. *Rogers 18233*.

W	S	C	N	E
---	---	---	---	---

angolensis Engl. & Diels

Herb, up to 100 mm tall. Stems usually prostrate, leafy. Leaves ovate to obovate-elliptic, 4–5 × 2–3 mm. Flowers solitary in axils of leaves, forming a corymbose-like structure. *Flowers white; October to February*. Grassland, vleis, river or streambanks. *Turner 1280*.

W	S	C	N	E
---	---	---	---	---

aquaemontis E. Wimm.

Prostrate herb. Stems puberulous. Leaves 5-lobed, lobes lanceolate, acute, 3–5 × 0.8–1.0 mm, petioles 3–4 mm long. Flowers solitary in axils of leaves, pedicel 25–40 mm long. *Flowers blue; January to May*. In shade under rock ledges. *Gernishuizen 244*.

W	S	C	N	E
---	---	---	---	---

dregeana (Presl) A. DC.

(= *L. omphalodoides* Schltr.,
= *Rapuntium dregeanum* Presl)

Erect or ascending herb, up to 150 mm tall. Flowers in terminal racemes. Stem glabrous. Lower leaves toothed, petioled, obovate, upper leaves lanceolate. Calyx tube as long as ovate, acute lobes. *Flowers blue; October*. Grassland, vleis. *Acoks 16184*.

W	S	C	N	E
---	---	---	---	---

erinus L.

(= *L. filiformis* Lam. var. *natalensis* (A. DC.) E. Wimm.,
= *L. nuda* Hemsl.)

Annual herb, up to 0.6 m high. Stems hairy at base. Lower leaves obovate, obtuse, toothed, upper leaves lanceolate or linear. Calyx tube shorter than linear, acuminate lobes. *Flowers blue with white and yellow in throat; July to April.* Grassland, woodland, stream-banks, riverbeds, moist areas. *Barker 440.*

W	S	C	N	E
---	---	---	---	---

euryoda E. Wimm.

Herb, up to 500 mm tall. Leaves with lamina ovate to broadly ovate, petiole broadly winged, margin toothed. Flowering branches terminal. *Flowers in racemes; yellowish green; February to April.* Grassland. *Kluge 1810.*

W	S	C	N	E
---	---	---	---	---

flaccida (Presl) A. DC. subsp. **flaccida**

(= *L. filiformis* Lam. var. *krebsiana* (A. DC.) E. Wimm.,
= *L. krebsiana* DC.)

Decumbent or ascending herb. Leaves linear to lanceolate, basal ones elliptic to ovate. Pedicels 10–50 mm long. Calyx lobes 2–6 mm long, with 1 or 2 pairs of teeth at margin, glabrous or ciliate. *Flowers blue; September to May.* Marshy grassland, edges of pans, margins of streams. *Retief & Herman 138.*

W	S	C	N	E
---	---	---	---	---

flaccida (Presl) A. DC. subsp. **mossiana** (R.D. Good)

Thulin

(= *L. mossiana* R.D. Good,

= *L. senegalensis* A. DC. var. *subaspera* E. Wimm.)

Erect herb, up to 250 mm tall. Leaves linear to lanceolate, basal ones linear to obovate. Pedicels 5–14(–20) mm long. Calyx lobes 3.0–5.5 mm long, entire or very occasionally toothed, ciliate to pubescent. *Flowers white, pale mauve or pale blue; July to June.* Grassland. *Meeuse 10294.*

W	S	C	N	E
---	---	---	---	---

goetzei Diels

(= *L. graciliflora* E. Wimm.)

Slender herb, up to 300 mm tall. Leaves usually sparsely arranged, sessile, obovate-cuneate, 20–40 × 3–10 mm, toothed in upper part. Flowers in terminal racemes, ± 10 mm long. *Flowers pink; July to June.* Forest margins, grassland on steep slope. *Clarke 377.*

W	S	C	N	E
---	---	---	---	---

laxa MacOwan

(= *L. krookii* Zahlbr.,
= *L. tysonii* E. Phillips)

Decumbent herb. Stems 300–400 mm long, barc of leaves. Leaves at base rosulate, lamina spathulate to obovate-oblong, apex round to obtuse. *Flowers blue; February.* Watercourses. *Beeton 37.*

W	S	C	N	E
---	---	---	---	---

lobata E. Wimm.

Prostrate or decumbent herb. Leaves suborbicular to subreniform, 5–15 × 5–15 mm, incised-dentate, petiolate. Pedicels ebracteate. *Flowers pale blue; April.* Rocky outcrops. *Muller & Scheepers 137.*

W	S	C	N	E
---	---	---	---	---

malowensis E. Wimm.

Small, erect herb, up to 400 mm tall. Leaf blade triangular, leaf with distinct petiole, 30–60 × 13–36 mm, sparsely hairy above. Corolla 8 mm long. Capsule subglobose. *Flowers pale mauve-pink or creamy white; December to April.* Forest floors. *Bos 1058.*

W	S	C	N	E
---	---	---	---	---

reinekeana E. Wimm.

Annual herb, up to 300 mm tall. Leaves alternate, sessile, linear, 30–60 × 3–7 mm, apex obtuse, margin with a few teeth. Flowers solitary in axils of leaves, pedicels 15–30 mm long. *Flowers blue; June.* Orchards. *Reineke 9180.*

W	S	C	N	E
---	---	---	---	---

stricklandiae Gilliland

Herb, up to 6 m high. Leaves sessile, crowning short, stout stem, deciduous soon after commencement of flowering, lanceolate to ovate-lanceolate, 150–200 × 50–90 mm. Inflorescence 3–4 mm long. Raceme from a rosette of leaves. *Flowers pinkish purple; October.* Forest. *Mogg 30268.*

W	S	C	N	E
---	---	---	---	---

thermalis Thunb.

(= *L. leptocarpa* Griess., *L. mundtiana* Cham.)

Prostrate herb. Stems simple or branched, hispid. Leaves sessile, ovate or elliptical, sharply serrate, 5–10 mm long. Flower axillary, shortly pedicellate. *Flowers blue; November to March.* Grassland, vleis, edges of pans. *Retief 1851.*

W	S	C	N	E
---	---	---	---	---

trullifolia Hemsl. subsp. **delicatula** (Compton) Thulin

(= *L. delicatula* Compton)

Herb, up to 120 mm tall. Leaves very shallowly crenate, equilateral-triangular, up to 10 mm long and wide. Corolla 3.0–6.5 mm long. *Flowers purple; March.* Wet kloofs, against cliffs. *Kluge 1854.*

W	S	C	N	E
---	---	---	---	---

vanreenensis (Kuntze) K. Schum.

Slender herb or scrambler. Leaves triangular or ovate, obtusely lobed or lobed-dentate, more rarely subsinuate, petioles delicate, wingless, as long as or longer than leaf blades. *Flowers blue or white; December to May.* Grassland, damp and shady rock crevices. *Van Jaarsveld 500.*

W	S	C	N	E
---	---	---	---	---

wilmsiana Diels

Herb, up to 500 mm tall. Leaves narrowly linear, 20–40 × 1 mm, sessile, glabrous, apex acute. Flowers in long racemes, pedicels 4–8 mm long. *Flowers white or blue; January to May*. Bushland, well-drained sandy loam. *Stalmans 386*.

W S C N E

Monopsis Salisb. (s. Afr.: 15 spp.) 8695000

Wimmer. 1953. Pflanzenreich 107: 698–713, 783–784.

Wimmer. 1968. Pflanzenreich 108: 889–891.

Thulin. 1983. F.Z. 7: 145–148.

decipiens (Sond.) Thulin

(= *Lobelia decipiens* Sond.)

Erect or ascending annual or perennial herb. Stems 50–450 mm long. Leaves alternate, linear, fairly numerous and densely set, up to 8–15(–25) × 0.8–1.5 (–2.5) mm. Flowers resupinate. Corolla 10 mm or longer. *Flowers dark blue or purple with yellow in throat; October to March*. Grassland, bogs, vleis. *Retief & Herman 67*.

W S C N E

kowynensis E. Wimm.

Procumbent perennial herb. Leaves opposite or mostly alternate, oblanceolate-oblong, 6–17 × 2–3 mm. Flowers solitary in axils of leaves, long-pedicelled. *Flowers sky-blue with yellow markings in throat; October to March*. Damp rock faces, moist shady slopes. *Codd 10053*.

W S C N E

stellarioides (Presl) Urb. subsp. **stellarioides**

(= *Dobrowskya stellarioides* Presl)

Decumbent annual or perennial herb. Leaves opposite, linear to elliptic, up to 10–35 × 2–9 mm. Flowers not resupinate, solitary, axillary, scattered on stem. *Flowers violet; October to April*. Shady banks in forest, moist situations, streambanks. *Codd 7838*.

W S C N E

zeyheri (Sond.) Thulin

Slender, erect or decumbent annual herb. Leaves ± elliptic, sessile, elliptic to narrowly ovate, up to 14 × 7 mm, acute at apex. *Flowers white, pale blue or pink*. Streambanks, shallow soils over rocks. No specimens in PRE.

W S C N E

LOGANIACEAE

Trees or undershrubs. Leaves opposite or 3-whorled, with stipules often connected at base by stipular ridge or absent. Flowers regular. Corolla tubular. Petals 4–16, united. Stamens as many as corolla lobes, attached to petals. Ovary superior. Fruit a capsule or berry.

Key after Verdoorn in F.S.A. 26: 135 (1963).

- 1a Corolla lobes 8–16; leaves large, 140–1000 mm long and 60–350 mm broad; fruit indehiscent, pericarp leathery; large trees **Anthocleista**
- 1b Corolla lobes 4 or 5; leaves never up to 1000 mm long; if sometimes up to 100 mm long and 50 mm broad then 3–5-nerved from near base 2
- 2a Fruit indehiscent, large (over 10 mm in diameter), pericarp woody or leathery; leaves 3- or more-nerved from or from near base **Strychnos**
- 2b Fruit a capsule, small (under 5 mm in diameter); leaves never 3- or more-nerved from base 3
- 3a Inflorescence racemose; suffrutices **Gomphostigma**
- 3b Inflorescence cymose; paniculate; trees, shrubs or stragglers 4
- 4a Leaves usually 3-nate, if opposite then not densely scaly or tomentose beneath; calyx coriaceous, usually lined with appressed hairs; corolla circumscissile near base; anther cells confluent **Nuxia**
- 4b Leaves opposite or subopposite, usually discolorous with lower surface densely scaly or tomentose; calyx herbaceous, glabrous within; corolla not circumscissile; anther cells distinct **Buddleja**

Anthocleista Afzel. ex R. Br. (s. Afr.: 1 sp.)

6466000

Verdoorn. 1963. F.S.A. 26: 135–136.

grandiflora Gilg

Tree, 6–30 m high. Stem straight, branched high up. Leaves clustered at ends of branchlets, very large: 130–950 × 60–350 mm. *Flowers white or cream; Oc-*

tober to December. In forests, along densely wooded streams, in creeks or hillside bush groups. *Obermeyer Tvl. Mus. 30063*.

W S C N E

Buddleja L. (s. Afr.: 7 spp.)

6473000

Verdoorn. 1963. F.S.A. 26: 159–168.

auriculata Benth.

Shrub, up to 2,7 m high. Leaves distinctly petioled, rounded or obovate at base, shiny and glabrous above. Stipules conspicuous, auriculate; petiole bases not prominent. Corolla tube long, cylindrical; stamens included. *Flowers whitish, white with orange throat, orange-yellow, lilac or salmon-coloured; April to August.* In rocky ravines, on mountainsides or at forest margins in mountainous country. *Codd 1714.*

W	S	C	N	E
---	---	---	---	---

dysophylla (Benth.) Radlk.

(= *Chilianthus dysophyllus* (Benth.) A. DC.)

Straggling or scandent shrub, 1,5–7,0 m high. Leaves petioled, deltoid to ovate, simply toothed or crenate, ± flat. Stipules represented by conspicuous interpetiolar ridge. Corolla tube short, campanulate. Anthers and filaments exserted. *Flowers white, dirty white, cream, white with maroon throat; July.* On forest margins, in patches of bush in kloofs or in streambank or riverbank bush. *Galpin 971.*

W	S	C	N	E
---	---	---	---	---

pulchella N.E. Br.

Shrub, 1,0–2,7 m, sometimes up to 7 m high. Leaves distinctly petioled, base cuneate and decurrent on petiole. Stipules absent or a faint interpetiolar ridge, persisting petiole bases prominent, concave. Corolla tube long, cylindrical. Stamens included. *Flowers cream, light orange to whitish with orange centre; July.* In forests, mostly on margins or in open parts. *Netshium-gani 1436.*

W	S	C	N	E
---	---	---	---	---

saligna Willd.

(= *Chilianthus oleaceus* Burch.)

Small tree or shrub, 0,5–7,0 m high. Leaves petioled, long and narrow, smooth above, sometimes reticulate, margins entire. Stipules represented by interpetiolar ridges. Corolla tube short, campanulate. Anthers and filaments clearly exserted. *Flowers white, cream, cream with reddish centre; October to May.* Dry hillsides, mixed bushveld, mountainsides, wooded valleys, forest margins and along rivers. *Meeuse 10563.*

W	S	C	N	E
---	---	---	---	---

salviifolia (L.) Lam.

Shrub or tree, 1–5 m high, sometimes up to 8 m high. Leaves subsessile, cordate to auricled at base, upper surface rugose. Interpetiolar leafy stipules present. Corolla tube long, cylindrical. Stamens included. *Flowers cream, lilac, lavender-blue, purple or white with deep orange throat; June to November.* Forest margins, rocky slopes, along watercourses, in dongas and isolated bushes on hillsides. *Van Vuuren 556.*

W	S	C	N	E
---	---	---	---	---

Gomphostigma Turcz. (s. Afr.: 2 spp.) 6470000

Verdoorn. 1963. F.S.A. 26: 168–171.

virgatum (L.f.) Baill.

Perennial herb, 0,6–2,6 m high. Leaves linear, usually 10–60 mm long. Flowers opposite, solitary in axils of upper leaves forming long, narrow, terminal racemes. *Flowers white; October to June.* Along or near watercourses and rivers, growing in running water among boulders or on banks in sand or mud. *De Winter 7697.*

W	S	C	N	E
---	---	---	---	---

Nuxia Comm. ex Lam. (s. Afr.: 5 spp.) 6469000

Verdoorn. 1963. F.S.A. 26: 150–159.

congesta R. Br. ex Fresen.

(= *Lachnopylis congesta* (R. Br. ex Fresen.) C.A. Sm.)

Shrub or tree, 2–20 m high. Leaves 3-nate, variable: from elliptic-oblong, oblong, obovate-oblong to suborbicular, 10–80 × 6–38 mm, petiole short, up to 10 mm long. Cymes corymbosely arranged, broader than long and often overtopped by leaves. *Flowers white or creamy white, some flowers with purplish tint especially in bud; February to November.* Dry rocky crests and wooded, stony slopes, at margins of mountain forests. *Leistner 662.*

W	S	C	N	E
---	---	---	---	---

floribunda Benth.

(= *Lachnopylis floribunda* (Benth.) C.A. Sm.)

Forest tree, 7 m high, occasionally 17 m high. Leaves 3-nate, oblong-elliptic, 45–155 × 10–55 mm, long-petioled: 13–45 mm long. Cymes arranged in large loose panicles. Inflorescence often overtopped by leaves in early stages. *Flowers white; March to October.* In or at edges of forests. *Van Warmelo 5157/16.*

W	S	C	N	E
---	---	---	---	---

glomerulata (C.A. Sm.) I. Verd.

(= *Lachnopylis glomerulata* C.A. Sm.)

Small tree or shrub, 1,0–2,5 m high. Leaves oblong, cuneate, 15–45 × 5–15 mm, margins entire or sometimes minutely toothed in upper half. Cymes contracted to form several- to many-flowered heads or umbels with bracts forming false involucre, inflorescence oblong in outline, overtopping leaves. *Flowers white; October to June.* Open hillsides, rocky western slopes or deep rocky ravines. *Leistner 664.*

W	S	C	N	E
---	---	---	---	---

gracilis Engl.

(= *Lachnopylis gracilis* (Engl.) C.A. Sm.)

Bushy shrub, 2,0–3,5 m high. Leaves linear-oblongeolate, 15–45 × 2–8 mm, conspicuously and finely serrate on margins. Cymes and inflorescence as in *N. glomerulata*. *Flowers white; September to December and in March.* Along watercourses in low dry areas. *Codd & Dyer 7698.*

W	S	C	N	E
---	---	---	---	---

oppositifolia (Hochst.) Benth.(= *Lachnopylis oppositifolia* Hochst.)

Shrub or tree, 2–7 m high. Leaves opposite, linear-oblong to oblanceolate-oblong, usually shallowly repand dentate, 45–90 × 4–15 mm. Cymes 3-flowered, inflorescence usually broader than long, often overtopped by leaves. *Flowers white; December to April.* Along rivers and streams, in valleys and deep gorges, among rocks or reeds or in relict subtropical forest. *Codd 5221.*

W	S	C	N	E
---	---	---	---	---

Strychnos L. (s. Afr.: 9 spp.)

6460000

Verdoorn. 1963. F.S.A. 26: 136–149.

Leeuwenberg. 1969. Meded. LandbHoogesch. Wageningen (Belmontia Taxonomy 10) 69-1: 160, 218.

coccuroides Baker

Tree or shrub, 2–8 m high. Stems thickly and persistently corky with longitudinal fissures; ultimate twigs rather thick, purplish or brownish, tomentulose; lateral and terminal twigs often converted into spines. Inflorescence terminal. Ovary 2-celled. Fruit large, 70 mm in diameter, many-seeded. *Flowers greenish; September to December.* Rocky slopes with scattered trees or on sandy flats in mixed woodland. *Marais 901.*

W	S	C	N	E
---	---	---	---	---

decussata (Pappe) Gilg

Slender tree, 2–12 m high. Leaves broadest at or above middle, broadly rounded at apex or shortly acuminate, up to 50 mm long. Fruit small, 16 mm in diameter, 1- or 2-seeded. *Inflorescence lateral; flowers 5-merous; creamy white or whitish green; September to February.* Lowveld bush on quartzite hillsides or sandy levels. *Netshiungani 930.*

W	S	C	N	E
---	---	---	---	---

henningsii Gilg

Tree, 3–16 m high. Leaves usually acute to subacute, distinctly 3-nerved from base, up to 65 mm long. Inflorescence lateral. Flowers 5-merous. Fruit small, 12 mm in diameter. Seeds deeply grooved. *Flowers greenish yellow, orange, yellow or cream.* High or low forest, in mist belt or dry areas, on wooded hillsides, in gullies or on riverbanks. *Codd 5267.*

W	S	C	N	E
---	---	---	---	---

madagascariensis Poir.(= *S. innocua* Delile subsp. *dysophylla* (Benth.) I. Verd., = *S. innocua* Delile subsp. *gerrardii* (N.E. Br.) I. Verd.)

Shrub or tree, 3–15 m high. Leaves rounded at apex. Inflorescence lateral. Ovules innumerable. Fruit large, from 40–100 mm in diameter, many-seeded, rind thick and woody. *Flowers greenish white or greenish yellow;*

August to February. Warm, dry, rocky country. *Marais 910.*

W	S	C	N	E
---	---	---	---	---

mitis S. Moore

Tree, 10–14 m high. Branchlets often pubescent, with a pair of persistent pointed cataphylls near base. Leaves up to 100 mm long, sometimes with acarodomatia. Inflorescence pubescent, lateral. Calyx petaloid, lobes broad. Fruit small, 13 mm in diameter. *Flowers creamy yellow; December to January.* Forests, in wet habitats. *Renny 197.*

W	S	C	N	E
---	---	---	---	---

potatorum L.f.(= *S. stuhlmannii* Gilg)

Tree, 5–14 m high. Growing point modified into spine-like tip, 1–3 mm long. Leaves and branchlets glabrous. Modified leaves near base of branchlets deciduous, leaving a ring mark. Leaves up to 170 mm long. Inflorescence glabrous, lateral. Calyx not petaloid, lobes longer than broad. Fruit small, 17 mm in diameter. *Flowers green; September and December.* Riverine bush, in silt or on rocky hillsides near rivers. *Netshiungani 956.*

W	S	C	N	E
---	---	---	---	---

pungens Soler.

Tree, 2–7 m high. Leaves narrowing towards apex and with distinct straight apical spine. Inflorescence lateral. Ovules innumerable. Fruit large, 100 mm in diameter, many-seeded, rind thick and woody. *Flowers greenish; October to December.* Dry sites on ledges, rocky slopes or at base of stony koppies. *De Winter 393.*

W	S	C	N	E
---	---	---	---	---

spinosa Lam.

Tree, 3–9 m high. Lateral and terminal twigs often converted into spines. Bark not very thickly corky; ultimate twigs from thin and varnished to thick, dull and light-coloured, sometimes puberulous. Inflorescence terminal. Ovary 1-celled. Fruit large, 60–90 mm in diameter, many-seeded. *Flowers pale green to greenish white; September to February and in May.* Wooded sandy granite slopes, in open bush and mopane veld of sandy flats and in bush along rivers. *Marais & Van der Schijff 1253.*

W	S	C	N	E
---	---	---	---	---

usambarensis Gilg

Tree, 2–15 m high. Leaves broadest in lower half, usually long-acuminate in upper half, up to 55 mm long. Inflorescence lateral. Flowers 4-merous. Fruit small, 14 mm in diameter, stipitate at base. *Flowers cream; December to January.* High forest, relict forest, deep wooded gorges, rocky banks of streams or in deep valleys. *Marais 1107* (flowers), *Taylor 5570* (fruit).

W	S	C	N	E
---	---	---	---	---

LORANTHACEAE

Aerial hemiparasitic shrubs of other dicotyledons; branches brittle, often with swollen nodes. Leaves opposite, without stipules. Flowers irregular, usually large and brightly coloured. Calyx reduced to a low rim. Corolla tubular, often split down one side. Petals 5 (rarely 4), united. Stamens 5 (rarely 4) attached to petals. Ovary inferior. Fruit a berry or drupe with a sticky inner layer.

Key after Wiens & Toelken in F.S.A. 10,1: 2–3 (1979).

- 1a Flower tetramerous **Helixanthera**
- 1b Flower pentamerous 2
- 2a Corolla choripetalous (but petals connivent and superficially sympetalous); buds and open flowers strongly curved or bow-shaped **Plicosepalus**
- 2b Corolla sympetalous, forming at least a short, but more often a conspicuous basal tube, essentially straight above swollen base 3
- 3a Flower radially symmetrical following anthesis (not producing V-shaped split) 4
- 3b Flower bilaterally symmetrical, following anthesis (bearing a single V-shaped, unilateral split which is sometimes obscured in pressed specimens) 5
- 4a Corolla, leaves and inflorescence essentially glabrous; inflorescence umbellate; anthers mostly persistent following anthesis **Pedistylis**
- 4b Corolla bearing conspicuously long (3–5 mm), white, silky, ascending hairs; young leaves generally light to densely stellate-pubescent; inflorescence a head; anthers typically breaking from filaments following anthesis **Erianthemum**
- 5a Filaments following anthesis essentially erect but often curving slightly inward, ± 3 mm long; style conspicuously tomentose in lower half **Vanwykia**
- 5b Filaments following anthesis coiled or inflexed 90° or more, 5 mm or more long; style essentially glabrous 6
- 6a Corolla tube with conspicuous basal swelling, then abruptly and very narrowly constricted (± 0.5 mm) just above swelling, thereafter enlarging laterally to ± 1.5 mm **Tieghemia**
- 6b Corolla tube without conspicuous basal swelling, if slightly expanded basally, then never abruptly constricted, enlarging laterally to at least 3 mm or more in diameter **Tapinanthus**

Erianthemum Tiegh. (s. Afr.: 2 spp.) 2074060

Wiens & Toelken. 1979. F.S.A. 10,1: 28–29.

dregei (Eckl. & Zeyh.) Tiegh.

(= *Loranthus dregei* Eckl. & Zeyh.)

Shrub, up to 2 m high, parasite on *Acacia*, *Kiggelaria*, *Euclea* etc. Young stems and petioles usually rusty pubescent. Leaves usually glabrous at maturity, usually borne singly on new branches. *Flowers orange and greenish yellow; May to January.* Forest and woodland. *Scheepers 844.*

W S C N E

ngamicum (Sprague) Danser

(= *Loranthus ngamicus* Sprague)

Shrub, up to 1 m high, parasitic on species of *Acacia*, *Albizia*, *Colophospermum* etc. Young stems and petioles usually whitish pubescent. Leaves evenly stellate-pubescent at maturity, borne in dense fascicles mostly on older branches. *Flowers pale yellow to orange; October to March.* Mopane veld, bushveld and woodland. *Acocks 20961.*

W S C N E

Helixanthera Lour. (s. Afr.: 3 spp.) 2074100

Wiens & Toelken. 1979. F.S.A. 10,1: 37–39.

garciana (Engl.) Danser

(= *Loranthus garcianus* Engl.,
= *Loranthus messinensis* N. E. Br.)

Robust, highly succulent shrub, up to 500 mm tall, parasitic on *Sclerocarya birrea* subsp. *caffra*. Leaves

thick and succulent, petioles 10–12 mm long. Inflorescence stout and elongated, rhachis 100–150 mm long, 2–3 mm wide. *Flowers reddish orange; December to February.* Mopane veld. *Zambatis 1524.*

W S C N E

Pedistylis Wiens (s. Afr.: 1 sp.) 2074070

Wiens & Toelken. 1979. F.S.A. 10,1: 32–33.

galpinii (Schinz ex Sprague) Wiens

(= *Loranthus galpinii* Schinz ex Sprague)

Shrub, up to 2 m high, parasitic on species of *Acacia*, *Combretum* etc. Corolla tube glabrous, 35–40 $\times$ 3–5 mm. Filaments curving gently outward to 90° following anthesis. Style broadly recurved, $\pm 180^\circ$ near apex. *Flowers greenish yellow; November to May.* Lowveld bush, sandy soil. *Wiens 5257.*

W S C N E

Plicosepalus Tiegh. (s. Afr.: 3 spp.) 2074090

Wiens & Toelken. 1979. F.S.A. 10,1: 34–37.

amplexicaulis Wiens

Moderate-sized shrub, up to 1 m high, parasitic on species of *Acacia*. Leaves conspicuously sagittate, clasping stem, linear to linear-oblong. *Flowers with base dull white, lobes bright red; April to May.* Lowveld. *Retief 345.*

W S C N E

kalachariensis (Schinz) Danser(= *Loranthus kalachariensis* Schinz)

Shrub, up to 1 m high, parasitic on species of *Acacia*. Leaves basally rounded to cuneate, subpetiolate to petiolate, oblong-linear to elliptic. Style curved or with a single basal bend. Berries red, smooth. *Flowers pinkish red; April to August*. Woodland, sandveld and riverine forest. *Zwanziger 876*.

W S C N E

Tapinanthus (Blume) Rchb. (s. Afr.:

20 spp.)

2074010

Wiens & Toelken. 1979. F.S.A. 10,1: 3–23.

ceciliae (N.E. Br.) Danser(= *Loranthus ceciliae* N.E. Br.)

Shrub, up to 1 m or more, often pendulous with age, parasitic on other mistletoes including species of *Plicosepalus* and *Viscum*. Leaves orbicular, oblong, ovoid, petioles rusty pubescent. Corolla tube swollen at base, corolla lobes erect, corolla whitish pubescent. Filaments red. *Flowers orange-yellow, greenish yellow basally; April to May*. Mopane veld. *Wiens 5325*.

W S C N E

crassifolius Wiens

Densely branched shrub, up to 1 m high, a parasite on *Sclerocarya birrea* subsp. *caffra*. Leaves markedly thick and succulent. Flowers crowded on short, stout lateral shoots. Corolla tube with split $\pm$ as long as closed portion. *Flowers with corolla lobes orange-yellow with red bands near apex; November to December*. Arid lowveld and mopane veld. *Codd & Dyer 4637*.

W S C N E

forbesii (Sprague) Wiens(= *Loranthus oleifolius* (Wendl.) Cham. & Schltdl. var. *forbesii* Sprague)

Shrub, up to 1 m high, parasitic on species of *Acacia* and *Sterculia*. Leaves with a minute, usually dull whitish margin. Corolla tube conspicuously swollen at base, lobes reflexed, glabrous. *Flowers dull pink with greenish apex; July to June*. Mixed bush with rocky outcrops. *Onderstall 232*.

W S C N E

gracilis Toelken & Wiens(= *Loranthus natalitius* Meisn. var. *minor* (Harv.) Wood)

Glabrous shrub, up to 1 m high, parasitic on species of various trees. Bud apex beaked to uncinatate at maturity. Corolla tube not swollen at base, corolla base 1–2 mm wide. Style filiform. *Flowers dark red with yellow band below apex; October to December*. Forest. *Stauffer & Weder 5277*.

W S C N E

kraussianus (Meisn.) Tiegh. subsp. **transvaalensis**

(Sprague) Wiens

(= *Loranthus kraussianus* Meisn. var. *transvaalensis* Sprague)

Shrub, up to 1 m high. Corolla with tube swollen at base, glabrous, lobes erect, basal swelling mostly rounded, but truncate below constriction of corolla tube. Branches buff-brown. Parasitic on diverse and numerous hosts including species of *Acacia*, *Combretum*, *Grewia* etc. *Flowers orange-red with deep orange bands near apex, greenish orange basally; December to February*. Wooded kloofs and woodland. *Onderstall 989*.

W S C N E

leendertziae (Sprague) Wiens(= *Loranthus oleifolius* (Wendl.) Cham. & Schltdl. var. *leendertziae* Sprague)

Large shrub, up to 1,5 m high. Leaves at maturity shortly petiolate, glabrous. Corolla villous-pilose pubescent, tube swollen at base, lobes reflexed. Parasitic primarily on species of *Acacia*. *Flowers with corolla base green, tube reddish purple, apex green; August to January*. Bushveld. *Wells 2053*.

W S C N E

lugardii (N.E. Br.) Danser(= *Loranthus breyeri* Bremek., = *Loranthus lugardii* N.E. Br.)

Shrub, up to 1 m high, parasitic primarily on *Acacia* species but also found on *Nicotiana* and *Ximenia*. Bud apex at maturity rounded to acute. Calyx tubular. Corolla glabrous, corolla tube not swollen at base, lobes slightly recurved at point of filament attachment. *Flowers with corolla pale greenish to pink with age; October to January*. Riverbanks and thornveld. *Barnard 580A*.

W S C N E

natalitius (Meisn.) Danser subsp. **zeyheri** (Harv.) Wiens(= *Loranthus moorei* Sprague, = *Loranthus zeyheri* Harv.)

Shrub, up to 1 m high, parasitic on species of *Acacia* and *Combretum*. Bud apex beaked to uncinatate at maturity. Leaves, petioles and pedicels pubescent to puberulent, leaves oblanceolate-obovate, 20–30 mm long. Corolla tube not swollen at base. *Flowers yellowish red, pink or white and green; October to January*. Rocky mountainsides, kloofs, bushveld, sandy soil. *Theron 1865*.

W S C N E

oleifolius (Wendl.) Danser(= *Loranthus namaquensis* Harv., = *Loranthus oleifolius* (Wendl.) Cham. & Schltdl.)

Shrub, up to 1 m high, parasitic on species of *Acacia*, *Aloe*, *Combretum*, *Maytenus* etc. Leaves at maturity shortly petiolate, glabrous. Corolla with tube swollen at base, lobes reflexed, puberulent. *Flowers with corolla tube dull pink with whitish variegations, light green at apex and base; August to December*. Bushveld and woodland. *Hemm 203*.

W S C N E

rubromarginatus (Engl.) Danser
(= *Loranthus glabrifolius* P. Conrath,
= *Loranthus rubromarginatus* Engl.)

Shrub, up to 1 m high, parasitic on species of *Protea*, *Faurea*, *Acacia* etc. Leaves with minute, usually dark reddish margin. Corolla glabrous, tube swollen at base, lobes reflexed. *Flowers pink or red; August to April*. Woodland, rocky hillsides. *Codd 4345*.

W S C N E

sambesiacus (Engl. & Schinz) Danser
(= *Loranthus sambesiacus* Engl. & Schinz)

Shrub, up to 500 mm tall, known only as a parasite on *Commiphora* species. Leaves without obvious lateral veins, linear-lanceolate, usually narrower than 10 mm. Petioles and young flowering shoots glabrous. *Flowers yellow-orange*. Mopane veld. *Pienaar 356*.

W S C N E

Tieghemia Balle (s. Afr.: 3 spp.) 2074020
Wiens & Toelken. 1979. F.S.A. 10,1: 23–25.

bolusii (Sprague) Wiens
(= *Loranthus bolusii* Sprague,
= *Tapinanthus bolusii* (Sprague) Danser)

Shrublet, up to 500 mm tall, parasitic on species of *Cassine* and *Berchemia*. Leaves dark green, elliptical

to oblong-rounded, mostly 35–50 × 15–25 mm, 3–5-nerved from just above base. *Flowers pink, grading into green, then white, lobes reddish pink; March to July*. Bushveld. *Van Wyk, Barlow & Wiens 5426*.

W S C N E

rogersii (Sprague ex Burt Davy) Wiens
(= *Loranthus rogersii* Sprague ex Burt Davy)

Shrublet, up to 500 mm tall, parasitic on species of *Salvadora*, *Balanites* and *Boscia*. Leaves light greyish green, lanceolate-ovate, mostly 18–25 × 8–12 mm, venation inconspicuous. *Flowers yellow and red; May to July*. Woodland. *Wiens 5317*.

W S C N E

Vanwykia Wiens (s. Afr.: 1 sp.) 2074050
Wiens & Toelken. 1979. F.S.A. 10,1: 28–29.

remota (Baker & Sprague) Wiens
(= *Loranthus remotus* Baker & Sprague)

Shrub, up to 1 m high, parasitic on species of *Lonchocarpus* and *Xeroderris*. Leaves obovate, rounded apically, cuneate into base, 50–60 × 30–40 mm. Inflorescence a 3–6-flowered umbel, completely covered by dense yellowish white tomentum. *Van Wyk 4757*.

W S C N E

LYTHRACEAE

Herbs, shrubs or trees, often in marshy or aquatic habitats. Leaves opposite, without stipules. Flowers regular. Sepals united into a calyx tube (hypanthium), often with appendages between lobes. Petals 4–8, arising from calyx tube, usually crumpled in bud, wrinkled when expanded. Stamens twice the number of petals and arising at different levels below them, bent inward in bud. Ovary superior. Fruit a capsule, included in persistent calyx tube.

Key after Dyer, Gen. 1: 396 (1975).

- 1a Herbs, annual or perennial.....2
- 1b Shrublets, shrubs or trees.....5
- 2a Calyx cylindrical or tubular.....**Lythrum**
- 2b Calyx campanulate, urceolate or globose.....3
- 3a Fruit a 2–4-valved septicidal capsule.....**Rotala**
- 3b Fruit not septicidal.....4
- 4a Fruit opening transversely by irregular split; flowers in dense or lax cymes, never aggregated into heads.....**Ammannia**
- 4b Fruit opening by small operculum and then splitting irregularly; some species with flowers aggregated into heads.....**Nesaea**
- 5a Undershrubs or shrubs; fruit opening by small operculum and then splitting irregularly.....**Nesaea**
- 5b Small trees, calyx membranous, lobes ± as long as tube; petals clawed.....**Galpinia**

Ammannia L. (s. Afr.: 4 spp.) 5474000
Immelman. 1991. Bothalia 21,1: 35–49.

auriculata Willd.
(= *A. senegalensis* Lam. ex Poir. var. *auriculata* (Willd.) Hiern)

Annual herb, 6–45 mm tall. Primary peduncles (3–)6–14 mm long. Calyx appendages absent. Petals

present. Style (1.0–)1.3–1.5 mm long. Mature fruits inflated and bubble-like, membranous-papery and shining, usually chestnut-coloured. *Flowers pink or purple; May*. In vleis, moist places in grassland, near waterfalls, etc. *Codd 5504A*.

W S C N E

baccifera L.

(= *A. aegyptiaca* Willd.,
= *A. wormskioeldii* Fisch., C.A. Mey. & Avé-Lall.)

Annual herb, 3–45 mm tall. Leaf bases cuneate or cuneate at base of plant and auriculate at top of plant, rarely all auriculate. Pedicels 0,5(–2,0) mm long. Petals absent or very small. Style 0,12–0,30 mm long. *Flowers white (if petals present); October to April*. Growing in moist soil near water bodies or in water. *Hanekom 1617*.

W	S	C	N	E
---	---	---	---	---

prieuriana Guill. & Perr.

(= *A. pusilla* Sond.)

Annual herb, 0,23–1,00 m high. Primary peduncles 0,5–3,0 mm long. Calyx appendages small to large, well-defined. Petals small or absent. Style 0,50–0,75 mm long. Mature fruits not inflated, walls opaque and dull, usually dark brown. *Flowering March to July*. Growing in or near water. *Codd 5504*.

W	S	C	N	E
---	---	---	---	---

senegalensis Lam. ex Poir.

Erect or sprawling annual herb, 7–55 mm tall. Leaf bases usually all auriculate, rarely auriculate and cuneate on the same plant or all cuneate. Pedicels (0,5–) 1,5–3,0 mm long. Petals absent. Style 0,12–0,30 mm long. *Flowering January to August*. Growing in or near water. *Codd & De Winter 5545*.

W	S	C	N	E
---	---	---	---	---

Galphinia N.E. Br. (s. Afr.: 1 sp.) 5480000

Fernandes. 1978. F.Z. 4: 279.

transvaalica N.E. Br.

Small tree or shrub, 3–7 m high. Branches quadrate. Leaves decussate; midrib with gland on underside just below apex. Flowers 5- or 6-merous in a terminal cyme. *Flowers creamy whitish; December to March*. Evergreen thickets, savannas on argillaceous-sandy or rocky soils. *Retief 368*.

W	S	C	N	E
---	---	---	---	---

Lythrum L. (s. Afr.: 3 spp.) 5476000

Sonder. 1862. F.C. 2: 516–517.

hyssopifolium L.

Subwoody, sometimes decumbent herb, up to 500 mm tall. Stems 4-angled and strongly winged. Leaves alternate, sessile, narrowly oblong to oblong-elliptic. Flowers solitary, axillary, nearly sessile; calyx 6-lobed. *Flowers pink or light purple, sometimes pale yellow at base; January*. Moist places, often where soil is disturbed, e.g. roadsides and in water canals. *Louw 1669*.

W	S	C	N	E
---	---	---	---	---

Nesaea Comm. ex A. Juss. (s. Afr.:

28 spp.)

5486000

Immelman. 1991. Bothalia 21,1: 35–49.

alata Immelman

Erect annual herb, 450 mm tall. Inflorescences subsessile. Primary bracts $\pm$ 1 mm long, flat. Calyx lobes 6; appendages very short to absent. Stamens 12. Style of pin flowers 3,6–4,3 mm long. *Flowers pink to purple; May*. In or next to still water. *Gertenbach 7006*.

W	S	C	N	E
---	---	---	---	---

anagaloides (Sond.) Koehne

(= *Ammannia anagaloides* Sond.,
= *N. loanensis* auct. non (Welw. ex Hiern) Koehne)

Erect, probably annual herb, up to 15(–25) mm tall. Leaf bases cordate. Bracts less than half as long as calyx. Flowers 1–few in leaf axils, subsessile or shortly pedunculate. Calyx 4-lobed, with long acute spreading appendages. Petals absent. Stamens 4, included or shortly exerted. *Flowering March and April*. Rock pools, moist areas and pans in grassland and on margins of streams. *Van Wyk 874*.

W	S	C	N	E
---	---	---	---	---

angustifolia Immelman

Slender annual herb, 6–170 mm tall. Leaves linear to linear-lanceolate. Flowers in hemispherical head subtended by bracts; inflorescences pedunculate. Calyx 4-lobed, appendages up to 0,2 mm long. Petals present. Stamens 4–8, included or shortly exerted. Style 0,65–0,85 mm long. *Flowers pink or magenta; March*. Moist places in bushveld. *Bredenkamp 1585*.

W	S	C	N	E
---	---	---	---	---

cordata Hiern

Slender erect annual herb, up to 100(–200) mm tall. Inflorescence of pedunculate axillary hemispherical heads with large subtending bracts; primary bract folded down midline and enclosing head of flowers. Calyx 4(or 5)-lobed; appendages 0,4–1,0 mm long. Petals present. Stamens 4(5), shortly exerted. Style 1,2–2,0 mm long. *Flowers light purple to mauve or pink; February to May*. Seepage areas, pans and by streams or springs, usually on banks in grassland but occasionally submerged in shallow standing or slow-flowing water. *Van Hoepen 1669*.

W	S	C	N	E
---	---	---	---	---

crassicaulis (Guill. & Perr.) Koehne

(= *Ammannia crassicaulis* Guill. & Perr.)

Creeping or submerged hydrophyte. Leaves flat, leaf bases cuneate. Inflorescence of sessile or shortly pedunculate axillary cymes; bracts less than half as long as calyx, one colour. Pedicels 2–5 mm long. Calyx lobes 4. Stamens 4, included. *Flowers pinkish mauve to purple; April and July*. In standing or running water. *Schlieben 9614*.

W	S	C	N	E
---	---	---	---	---

cymosa *Immelman*

Slender, glabrous, probably prostrate annual herb. Bracts 2, 2–3, 6 × 0,65–1,45 mm; primary bracts longer than calyx. Calyx with large appendages. Petals absent. Stamens 4, included. Style 0,25 mm long. Moist sand or on rock sheets by water. *Kluge* 2288.

W	S	C	N	E
---	---	---	---	---

dinteri *Koehne* subsp. **elata** *A. Fern.*

(= *N. transvaalica* A. Fern.)

Erect annual herb, 0,13–0,65 m high. Leaves flat, opposite, bases hastate. Flowers in lax axillary compound cymes; bracts less than half as long as calyx, one colour. Peduncles up to 6 mm long. Calyx lobes 4 or 5, with large appendages. Petals present. Stamens 4, exserted. Style 1,45–2,60 mm long. *Flowers pink; March to May.* In or near water. *Galpin* M 730.

W	S	C	N	E
---	---	---	---	---

drummondii *A. Fern.*

Erect or decumbent annual herb, up to 300 mm tall. Stems quadrangular and ribbed. Inflorescence of subsessile axillary cymes. Primary bracts half as long as to longer than calyx. Petals present, small. Calyx 4-lobed. Stamens 8, included. Style 0,25–0,50 mm long. *Flowers pinkish red; April.* Near water, on dam margins and moist areas in grassland. *Straub* 194.

W	S	C	N	E
---	---	---	---	---

heptamera *Hiern*

Semiwoody perennial herb, up to 300 mm tall. Leaf bases cuneate to obtuse. Open flowers with primary peduncles 10 mm or longer. Primary bracts ± 1 mm long. Calyx 6-lobed, appendages absent. Stamens 12. *Flowers deep orange; October and November.* Moist places in grassland, often in saline areas. *Van der Schijff* 3896.

W	S	C	N	E
---	---	---	---	---

passerinoides (*Hiern*) *Koehne*

(= *Ammannia passerinoides* Hiern)

Small woody perennial shrub, up to 0,7 m high. Leaves densely hirsute. Inflorescence of axillary cymes. Primary bracts half as long as to longer than calyx. Calyx 4-lobed. Petals absent. Stamens 4, exserted. Style longer than 0,8 mm. *Flowering July, October and March.* Near water. *Thorncroft* 3987.

W	S	C	N	E
---	---	---	---	---

radicans *Guill. & Perr.* var. **floribunda** (*Sond.*) *A. Fern.*

(= *N. floribunda* Sond.)

Stout erect perennial herb, up to 0,75 m high, with ± dense crispate hairs. Leaf bases cuneate to cordate. Inflorescence of pedunculate hemispherical to nearly globular clusters subtended by large bracts, 8 mm long. Calyx lobes 6, long. Stamens 12, exserted. *Flowers purple-pink; February to May.* Moist ground near dams, vleis and streams, often among boulders or low vegetation. *Codd* 5353.

W	S	C	N	E
---	---	---	---	---

rigidula (*Sond.*) *Koehne*

(= *Lythrum rigidulum* Sond.)

Semiwoody perennial herb, up to 300 mm tall. Leaf bases cordate to sagittate. Open flowers with primary peduncles 2–5 mm long. Primary bracts ± 1 mm long. Calyx 6-lobed, appendages absent. Stamens 12. *Flowers deep orange; September to February.* Moist open places such as margins of pans and in vleis. *Germishuizen* 3340.

W	S	C	N	E
---	---	---	---	---

sagittifolia (*Sond.*) *Koehne* var. **sagittifolia**

(= *N. sagittifolia* (Sond.) *Koehne* var. *glabrescens* *Koehne*)

Small, erect, woody perennial shrub, up to 500 mm tall. Stems terete. Leaves spirally arranged. Inflorescence subsessile. Calyx 3–4 mm long, 4-lobed. Stamens 8, at least some longer than 5 mm, exserted. Style longer than 3,5 mm. *Flowers mauve to lilac; September to April.* Damp open grassland. *Germishuizen* 3919.

W	S	C	N	E
---	---	---	---	---

sagittifolia (*Sond.*) *Koehne* var. **ericiformis** *Koehne*

forma **swaziensis** *Immelman*

Small, erect, woody perennial shrub, up to 500 mm tall. Stems terete. Leaves spirally arranged, erect and imbricate, sometimes spreading. Inflorescence subsessile, pedicels and primary peduncles shorter than 2 mm. Calyx 1–2 mm long, 4-lobed. Stamens 8, at least some longer than 5 mm, exserted. Style longer than 3,5 mm. *Flowers mauve to lilac; January to March.* Vleis and damp places in open grassland. *Galpin* 1273.

W	S	C	N	E
---	---	---	---	---

saluta *Immelman*

Slender annual herb, up to 200 mm tall. Stems quadrangular, glabrous. Inflorescence subsessile or peduncles up to 6 mm long, pedicels up to 4 mm long. Calyx 4-lobed, without appendages. Petals small. Stamens 4, shortly exserted. Style 0,35–1,00 mm long. *Flowers pale pink or purplish brown.* Moist, often sandy places. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

schinzii *Koehne*

(= *N. schinzii* *Koehne* var. *rehmannii* *Koehne*,

= *N. schinzii* *Koehne* var. *fleckii* *Koehne*)

Small, woody perennial shrub, 100–350 mm tall. Stems quadrangular. Leaf base hastate to cuneate, leaves opposite or spiral, shortly petiolate. Flowers trimorphic. Calyx 4-lobed, 1,0–2,5(–5,0) mm long. Stamens (4)8, at least some longer than 5 mm, exserted. Styles 1,00–4,75 mm long. *Flowers pale purple to magenta; July to June.* Damp open grassland. *Codd* 5415.

W	S	C	N	E
---	---	---	---	---

schlechteri *A. Fern.*

Decumbent herb. Inflorescence a hemispherical head with large subtending bracts. Calyx 4-lobed. Petals absent. Stamens 4, included. Style up to 0,3 mm long, included. *Flowering January.* Wet boulders near waterfalls. *Schlechter* 4243.

W	S	C	N	E
---	---	---	---	---

tolypobotrys *Koehne*

Erect, usually robust, probably perennial herb, (0,08–)0,30–0,60 m high. Inflorescence usually sessile, a dense hemispherical head subtended by a pair of broad bracts; primary bract flat, not enclosing flowers. Calyx 4-lobed. Petals present. Stamens 8, exserted. Style 2,5 mm long or longer. *Flowers pale mauve*. Wet places, often in sandy soil or on rock sheets. No specimens in PRE.

W S C N E

zambatidis *Immelman*

Robust, probably annual herb, up to 300 mm tall. Stems terete, glabrous. Base of larger leaves sagittate. Primary bracts less than half as long as calyx. Calyx 4(5)-lobed; widest at mouth, tube broadly campanulate. Petals present. Stamens 8, included or shortly exserted. Style 0,65–1,80 mm long. *Flowers pink; January to May*. In standing water of rock pools and seasonal pans. *Van der Schijff 3057*.

W S C N E

Rotala *L. (s. Afr.: 7 spp.)*

5473000

Cook. 1979. Boissiera 29: 9–133.

capensis (*Harv.*) *A. Fern. & Diniz*

Amphibious, tufted or turf-forming annual herb. Leaves decussate or rarely in whorls of 3. Flowers minute, solitary in axils of bracts. Petals absent. Stamens 2. Capsule opening by 2 valves, ellipsoidal, ±

twice as long as calyx tube. *Flowering April to June*. Pans and rock pools, in standing water; often submerged. *Vorster 2222*.

W S C N E

filiformis (*Bellardi*) *Hiern*(*= R. heterophylla* Welw. ex A. Fern. & Diniz)

Amphibious or aquatic annual, possibly sometimes perennial, herb. Leaves in pairs at nodes. Petals absent or 1 or 2 minute acicular petals. Stamens 2. Capsule 2-valved, less than twice as long as calyx tube. Swampy areas, usually on sand, on riverbanks and beds of recently dried pans and streams. No specimens in PRE.

W S C N E

mexicana *Cham. & Schldl.*

Annual herb. Leaves in whorls of 3–5(–8). Petals absent. Stamens (1)2(4). Capsule 3-valved, as long as calyx tube. *Flowering November*. Growing in or near water. *Wager PRE 49535*.

W S C N E

tenella (*Guill. & Perr.*) *Hiern*(*= R. submersa* Dinter ex Pohnert)

Aquatic or amphibious annual or perhaps perennial herb. Leaves decussate. Flowers solitary in axils of leaf-like bracts. Petals variable, caducous, absent or up to 4, linear to obovate. Stamens 4. Capsule opening by 4 valves, ellipsoidal to globose, equal to or exceeding calyx. *Flowers pink; February to April*. Growing in or near water. *Van der Schijff 2101*.

W S C N E

MALPIGHIACEAE

Scramblers, climbers or shrubs, often covered with T-shaped hairs. Leaves usually opposite, glands often present on either petiole or lower surface of blade; stipules present or absent. Flowers slightly irregular. Sepals 5, free, often with 2 glands on outer surface. Petals 5, free, stalked, with fringed margins. Stamens 10, free or fused at base. Ovary superior, 3-locular, with 3 separate styles. Fruit winged.

Key after Immelman *et al.* in F.S.A. 18,3: 63 (1986).

- 1a Leaves alternate; styles 2 **Acridocarpus**
 1b Leaves opposite or ternate; styles 3 2
 2a Flowers yellow or orange; fruit with obliquely oblong dorsal wing **Spheadamnocarpus**
 2b Flowers pink, fading whitish; fruit with saucer-like lateral wing **Triaspis**

Acridocarpus *Guill. & Perr. (s. Afr.:*

1 sp.)

4220000

Immelman. 1986. F.S.A. 18,3: 69–71.

natalitius *A. Juss. var. natalitius*

Scandent, evergreen shrub or small tree, up to 6 m high. Young stems rufous-pubescent. Leaves oblong to ovate, (13–)15–75 mm wide. Fruit with oblong-triangular wings, 13–42 × 10–25 mm. *Flowers yellow*;

January to April. Forest, dense bushveld, rocky outcrops. *Leach & Bayliss 13621*.

W S C N E

Spheadamnocarpus *Planch. ex Benth. &**Hook. f. (s. Afr.: 2 spp.)* 4219000

Launert. 1963. F.Z. 2: 124–125.

De Villiers & Botha. 1986. F.S.A. 18,3: 66–69.

PRE herbarium practice, following Retief.

pruriens (Juss.) Szyszyl. subsp. **pruriens**
(= *Acridocarpus pruriens* Juss.)

Herbaceous or woody climber. Leaves yellowish sericeous on both surfaces, lamina elliptic, ovate, obovate or lanceolate, 135 × 100 mm. Stipules reniform, ovate or obovate, 2–10 mm long. *Flowers yellow to orange; November to March.* Open bush, shrubland. *Van der Meulen 161.*

W S C N E

pruriens (Juss.) Szyszyl. subsp. **galphimiifolius** (Juss.)
P.D. de Villiers & D.J. Botha
(= *Acridocarpus galphimiifolius* Juss.)

Tall woody climber or creeper. Leaves glabrous or nearly so, but never sericeous, lamina 75 × 50 mm. Trichomes restricted to leaf margins, mid- and lateral veins. *Flowers up to 25 mm in diameter, yellow; January to April.* Forest, woodland. *Van Wyk, Dahlgren & Kok 5439.*

W S C N E

transvaalicus (Kuntze) Burtt Davy
(= *Triaspis transvaalica* Kuntze)

Scrambling shrublet. Branchlet tips twining. Wing of fruit broadly ovate. Leaves opposite, lamina 12–30 × 5–15 mm, lanceolate, ovate-lanceolate or ovate-oblong, base with 2 sessile or shortly stalked glands on margin near insertion of petiole. *Flowers yellow; January to February.* Open grassland, rock crevices. *Hanekom 1730.*

W S C N E

Triaspis Burch. (s. Afr.: 2 spp.) 4206000
Immelman. 1986. F.S.A. 18,3: 63–66.

glaucophylla Engl.
(= *T. leendertziae* Burtt Davy)

Scandent shrub, up to 2 m high. Leaves ovate to orbicular, 0,7–1,6 times longer than wide, petiole 4–16 mm long. Wing on carpel 1,2–2,0 times as long as wide. *Flowers lilac or bluish to white; October to April.* Wooded grassland, woodland, bushveld. *Monning 63.*

W S C N E

hypericoides (DC.) Burch. subsp. **hypericoides**

Scrambling shrub up to 1 m high. Leaf lamina canescent at all stages, ± narrowly linear-lanceolate, apex acute. Fruit winged. *Flowers mauve, fading to white with age; October to May.* Closed shrubland. *Glen 1885.*

W S C N E

hypericoides (DC.) Burch. subsp. **canescens** (Engl.) Immelman
(= *T. canescens* Engl.,
= *T. nelsonii* Oliv. subsp. *canescens* (Engl.) Launert)

Shrub, up to 1 m high. Subsp. *canescens* differs from subsp. *nelsonii* only in the long hairs which persist even when the leaves are mature. *Flowers light purple; October to November.* Bushveld. *Van der Schijff 3970.*

W S C N E

hypericoides (DC.) Burch. subsp. **nelsonii** (Oliv.) Immelman

Scandent shrub, up to 1,5 m high. Leaf triangular-ovate to narrowly linear-lanceolate, 1,2–3,0 times longer than wide. Wing on carpel 0,8–1,3 times as long as wide, 25–40 mm wide. *Flowers lilac to white; October to May.* Bushveld and grassland. *Smith 1379.*

W S C N E

MALVACEAE

Herbs, shrubs or trees, often covered with star-shaped hairs. Leaves alternate, often variously lobed, palmately veined, often with deciduous stipules. Flowers regular. Calyx sometimes subtended by an epicalyx (lower calyx whorl). Petals 5, free. Stamens numerous, united into a tube around style, joined to petals at base; anthers free. Ovary superior, with 5 or more locules, free or fused, branched above. Fruit dry, breaking into segments or a capsule.

Key partly after Leistner (pers. comm.).

- 1a Style branches and stigmas twice as many as carpels (style branches mostly 10, carpels 5) **Pavonia**
- 1b Style branches and stigmas as many as carpels (5–many) or style undivided and stigma ± entire 2
- 2a Fruit a capsule or indehiscent and woody to ± fleshy; staminal column mostly truncate or toothed at apex, bearing anthers on most or much of its surface 3
- 2b Fruit a schizocarp with mericarps eventually separating from persistent axis; staminal column split at apex into numerous filaments, anthers borne only near apex of column, or rarely throughout upper half 7
- 3a Style divided apically into distinct branches; stigmas capitate to clavate **Hibiscus**
- 3b Style simple (rarely very slightly divided at tip), apex 5-lobed or clavate with ± coherent stigmas 4
- 4a Calyx distinctly 5-lobed 5
- 4b Calyx truncate, entire or at most dentate or undulate 6
- 5a Calyx with rows of black oil glands along nerves **Cienfuegosia**
- 5b Calyx without black oil glands **Radyera**

- 6a Epicalyx of 3 large, leaf-like, persistent bracts *Gossypium*
 6b Epicalyx of 3–8 small, narrow, deciduous bracts *Azanza*
 7a Epicalyx absent 8
 7b Epicalyx present 12
 8a Ovules 2 or more per locule; seeds mostly 2 or more per mericarp or sometimes 1 by abortion 9
 8b Ovules 1 per locule; seeds 1 per mericarp 11
 9a Mericarps not divided *Abutilon*
 9b Mericarps $\pm$ divided into 2 compartments by a transverse constriction 10
 10a Mericarps 3–5 *Wissadula*
 10b Mericarps more than 5 *Sphaeralcea*
 11a Corolla cream to orange, rarely white; lateral walls of mericarps not disintegrating before fruit breaks up *Sida*
 11b Corolla pink to purple; lateral walls of mericarps disintegrating before fruit breaks up *Anoda*
 12a Style branches filiform throughout with longitudinally extended stigmatic surfaces on adaxial side towards apex; epicalyx of 3 bracts, free to base, mostly linear to lanceolate *Malva*
 12b Style branches with capitate to introrsely subdecurent stigmas 13
 13a Ovules 1 per locule; petals yellow *Malvastrum*
 13b Ovules and seeds 2 or more per locule; plants prostrate, biennial to annual *Modiola*

Abutilon Mill. (s. Afr.: 21 spp.) 4983000

Brenan. 1953. Kew Bull. 9: 90.
 Meeuse. 1961. F.Z. 1: 484–499.
 Meeuse. 1961. Bothalia 7: 484–486.

angulatum (Guill. & Perr.) Mast. var. *angulatum* (= *A. intermedium* Hochst. ex Garcke)

Shrub, 1–3 m high. Older stems markedly angled by coarse longitudinal ridges. Flower buds spherical, greyish. Calyx lobes shorter than 7 mm, triangular. *Flowers yellow, orange or apricot; January to October*. Alkaline or brackish soils in open situations such as pans, riverbanks, roadsides, low scrub and bush. *Codd 4217*.

W S C N E

angulatum (Guill. & Perr.) Mast. var. *macrophyllum* (Baker f.) Hochr.

Shrub, 1–3 m high. Stems as in var. *angulatum*. Flower buds distinctly angular, yellowish. Calyx lobes longer than 7 mm, ovate to ovate-lanceolate. *Flowers yellow, orange or apricot; May to September*. Forest margins, forest regrowth, dense scrub and riverine bush. *Van der Schijff 5497*.

W S C N E

austro-africanum Hochr.

Small shrub, 0.50–0.75 m high. Indumentum of branches, petioles, pedicels and calyx tube stellate-tomentose with additional simple patent hairs up to 2 mm long. Leaf margins shallowly serrate or crenate. Mericarps 20–30. *Flowers yellow; September to June*. Open vegetation on sandy to gravelly, often brackish soils, often in pans. *De Winter 2220*.

W S C N E

fruticosum Guill. & Perr.

Shrub, 0.50–1.25(–2.00) m high. Flowers opening in the morning. Mericarps $\pm$ 10, broadly keeled in apical half, giving fruit characteristic ribbed appearance. *Flowers yellow, orange to apricot; February to September*. Xerophilous low scrub and wooded grassland vegetation, often on alkaline soils. *Pole-Evans 4469*.

W S C N E

galpinii A. Meeuse

Shrub, 0.75 m high. Leaves often with narrowly triangular apical portion, upper leaf surface often slightly scabrid. Mericarps smaller than 14 $\times$ 8 mm, dark straw-coloured to purplish. *Flowers orange-yellow and buff; November to December*. Light shade on lower mountainsides. *Galpin 1197*.

W S C N E

grandiflorum G. Don

Soft-wooded shrub or herb, 0.75–1.50 m high. Pedicels up to 80 mm long. Calyx 15–17 mm long, cupuliform. Fruit densely stellate-pilose and stellate-pubescent. *Flowers yellow; January to September*. In sunny to slightly shaded places on sandy gravelly or rocky soil. *Codd 4254*.

W S C N E

grandifolium (Willd.) Sweet* (= *A. tortuosum* Guill. & Perr.)

Shrub, up to 2(–3) m high. Stems, petioles, pedicels and sometimes calyx tube densely covered with simple patent hairs 2–4 mm long. Mericarps fewer than 17 per fruit. *Flowers yellow to orange; January*. Weed, introduced from South America. Native to South America. *PRE 47329*.

W S C N E

guineense (K. Schum.) Baker f. & Exell (= *A. asiaticum* sensu Garcke, = *Sida guineensis* K. Schum.)

Annual or biennial herb, 1.5 m high. Upper surface of leaf scabrid, rough to the touch. Ripe fruit densely hirsute, nearly enclosed by calyx. *Flowers yellow; September to May*. Semiruderal and in open places in bush, often on sandy soil. *Codd 5709*.

W S C N E

hirtum (Lam.) Sweet

(= *A. graveolens* (Roxb. ex Hornem.) Wight & Arn.)

Soft-stemmed shrub or herb, 1.5 m high. Young parts viscid; indumentum of stems stellate-velvety usually intermingled with sparse longer patent hairs and with

dense amber-coloured glandular hairs. Mericarps mucous or occasionally mucronate. *Flowers yellow often with reddish centre or red venation; January and April.* From dry habitats to riverine silty soils, usually on more alkaline types of soil. *Codd 4058.*

W S C N E

lauraster Hochr.

Soft-wooded shrub or herb, 1–2 m high. Apex of mericarps drawn out into subulate awns 2–3 mm long. Leaves subentire, upper surface softly pubescent. *Flowers yellow; March to April.* Semiruderal, roadsides to open woodland, on variety of soils. *Codd 6543.*

W S C N E

mauritianum (Jacq.) Medik.

(= *A. zanzibaricum* Bojer ex Mast.)

Soft-wooded shrub, 1.5 m high. Mericarps numerous, ultimately black and stellately spreading, with long apical awn at least one-third of total length of mericarp. *Flowers yellow, sometimes with reddish centre or red veins; June to March.* Semiruderal, roadsides to open woodland; on variety of soils. *Lang Tvl.Mus. 32294.*

W S C N E

piloso-cinereum A. Meeuse

Soft shrub or herb, 1.5 m high. Young stems with very dense and very short stellate pubescence mixed with numerous patent simple hairs. Apex of mericarps drawn out into an awn up to 2 mm long. *Flowers yellow; August to May.* Rocky slopes in areas with low annual rainfall. *Repton 4309.*

W S C N E

pynodon Hochr.

(= *A. flavum* Ulbr.,
= *A. marlothii* Ulbr.,
= *A. matopense* Gibbs)

Perennial shrub, 0.75–2.00 m high. Indumentum without patent simple hairs. Mericarps 20–30 in number, 5–7 × 3–5 mm. *Flowers yellow to apricot; October and January to June.* On granite, norite and sandstone slopes in fairly exposed to rather shady situations. *Codd & Dyer 3817.*

W S C N E

ramosum (Cav.) Guill. & Perr.

(= *A. harmsianum* Ulbr.)

Herb or shrub, 1.25 m high. Leaves usually ± 3-lobed. Pedicels 2–4-nate on common peduncle. Mericarps ± 10, with long subulate spreading or recurved awns. *Flowers yellow to orange; September to April.* Mainly in rocky places, often in semishade. *Codd 5305.*

W S C N E

rehmannii Baker f.

(= *A. seineri* Ulbr.)

Soft-wooded shrub, 1.5 m high. Pedicels up to 30(–50) mm long. Calyx 6–8 mm long. Fruit velutinous. Mericarps 12–16, apex toothed to shortly awned. *Flowers yellow or pale yellow.* On alkaline soils such as dolo-

mite hillsides, limestone flats and salt pans. *Meeuse 10577.*

W S C N E

sonneratianum (Cav.) Sweet

(= *A. untaliense* Baker f.)

Perennial shrub, 0.5–1.5(–2.0) m high. Mericarps subrectangular in outline, much compressed, nearly glabrous and papery when mature; upper dorsal angle acute; ventral tooth usually conspicuously upcurved at tip. *Flowers yellow or orange-yellow; July and November to April.* A typical forest-edge plant on mountainsides, rocky or loamy soils, in light shade. *Meeuse 10306.*

W S C N E

Anoda Cav. (s. Afr.: 1 sp.)

5002000

Correll & Johnston. 1970. *Manual Vasc. Pl. Texas*: 1054.

cristata (L.) Schltr.*

Herb, up to 0.8 m high, sparsely hirsute with long, mostly simple, spreading or retrorse hairs. Leaves deltoid to triangular-ovate or -lanceolate. Carpels 9–20, hispid, not reticulate on back. *Flowers pink to purple; December to February.* Weed in disturbed places. Native from Texas to Arizona. *Story 1929.*

W S C N E

Azanza Alef. (s. Afr.: 1 sp.)

5018010

Exell. 1961. *F.Z.* 1: 432–434.

garckeana (F. Hoffm.) Exell & Hillc.

(= *Shantzia garckeana* (F. Hoffm.) Lewton,
= *Thespesia garckeana* F. Hoffm.)

Tall shrub or tree, 3–4 m or up to 10 m high. Leaves suborbicular in outline, palmately 3–5-lobed, midrib with longitudinal fissure. Epicalyx cupuliform, fused with calyx, with 9 or 10 teeth. *Flowers yellow or purplish with dark purple or dark red centre; January to February.* In many kinds of woodland; on a wide range of soils. *Codd 6908.*

W S C N E

Cienfuegosia Cav. (s. Afr.: 3 spp.)

5019000

Exell. 1961. *F.Z.* 1: 426–428.

digitata Cav.

(= *Fugosia digitata* (Cav.) Pers.)

Perennial herb or shrub, 0.09–1.00 m high. Leaves 3–5-palmatisect. Stipules 2.5 mm long, filiform or very narrowly linear. *Flowers yellow with purple centre; November to January.* Thorn-scrub and steppes. *Hardy & De Villiers 5127.*

W S C N E

gerrardii (Harv.) Hochr.

(= *Fugosia gerrardii* Harv.,
= *Thespesia rehmannii* Szyszyl.)

Prostrate perennial herb or shrub. Leaves suborbicular in outline, shallowly 3–5-lobed, margins not toothed, base usually cordate. Stipules up to 15 × 6 mm, elliptic, foliaceous. *Flowers sulphur-yellow with dark red or purplish centre; December to February.* On rock outcrops. *Liebenberg* 3492.

W	S	C	N	E
---	---	---	---	---

hildebrandtii Garcke

Perennial herb or shrub, up to 1,5 m high. Leaves flabelliform, margin toothed in upper half, base cuneate. Stipules up to 10 × 6 mm, foliaceous, sometimes somewhat amplexicaul. *Flowers yellow with dark red or purplish centre; October to March.* Wooded grassland and grassland, on crests and slopes of hills with good soil-cover and near watercourses. *Codd* 5229.

W	S	C	N	E
---	---	---	---	---

Gossypium L. (s. Afr.: 3 spp.) 5020000

Exell. 1961. F.Z. 1: 428–431.
Vollesen. 1987. Kew Bull. 42.2: 337–349.

herbaceum L. subsp. **africanum** (Watt) Vollesen

(= *G. obtusifolium* Roxb. ex G. Don var. *africanum* Watt,
= *G. herbaceum* L. var. *africanum* (Watt) Hutch. & Ghose,
= *G. transvaalense* Watt)

Small shrub, 1,0–1,5 m high. Leaves up to 60 × 60 mm, suborbicular in outline, cordate at base, 5–7-lobed to less than halfway. Stipules up to 9 × 15 mm, narrowly linear-lanceolate. *Flowers yellow with purple centre; July to June.* Woodland, bush and grassland. *Schweick-erd* & *Verdoorn* 564.

W	S	C	N	E
---	---	---	---	---

Hibiscus L. (s. Afr.: 58 spp.) 5013000

Medley Wood. 1897. J. Bot., Lond. 35: 350.
Exell. 1959. Bolm Soc. boteriana. 33: 165–181.
Exell. 1961. F.Z. 1: 434–472.

aethiopicus L. var. **ovatus** Harv.

(= *H. leiiospermus* Harv.,
= *H. ovatus* Cav.)

Perennial herb, 140–350 mm tall. Leaves ovate, entire. Bracts of epicalyx linear to narrowly linear-elliptic, 10 mm long or longer, up to 3 mm broad. *Flowers yellowish, cream or white; October to March.* Grassland. *Codd* 2170.

W	S	C	N	E
---	---	---	---	---

altissimus Hornby

(= *H. furcatus* sensu Harv. non Roxb.)

Woody scrambler, with recurved prickles on stem. Bracts of epicalyx forked. Stipules narrow, linear to subulate, not amplexicaul. Peduncle 10–60 mm long. *Flowers yellow or terracotta, sometimes with dark*

centre; April and July. In semi-evergreen riverine woodland. *Scheepers* 438.

W	S	C	N	E
---	---	---	---	---

articulatus Hochst. ex A. Rich.

Prostrate perennial herb or shrub. Leaves almost glabrous or with sparse hairs on nerves beneath. Bracts of epicalyx linear to linear-lanceolate, 3,5–6,0 mm long, up to 2 mm broad. *Flowers white or pale yellow; November.* Woodland and roadsides. *Lang* PRE 32164.

W	S	C	N	E
---	---	---	---	---

barbosae Exell

(= *H. aponeurus* sensu Burt Davy non Sprague & Hutch.)

Perennial herb, 1,5 m high. Leaves often 3-lobed. Petals 10–25 mm long. Free parts of filaments of the stamens 2–4 mm long. *Flowers red; November to January.* Grassland and fallow land. *Buitendag* 1134.

W	S	C	N	E
---	---	---	---	---

barnardii Exell

Perennial herb, 1,0–2,5 m high. Leaves suborbicular-cordate, with densely tomentose indumentum entirely covering surface of lamina. Petals 10–25 mm long. Free part of filaments of the stamens 0,5(–1,0) mm long. *Flowers red; November to January.* Rocky slopes. *Barnard* 156.

W	S	C	N	E
---	---	---	---	---

caesius Garcke

(= *H. gibsonii* Stocks ex Harv.,
= *H. pentaphyllus* F. Muell.)

Shrub, up to 2 m high. Epicalyx bracts 7–9, rigid and pungent. Seeds ± glabrescent. *Flowers yellow or cream with purple or reddish brown centre; December to February and in June.* Woodland and riverine fringes. *Meeuse* 9305.

W	S	C	N	E
---	---	---	---	---

calyphyllus Cav.

(= *H. calycinus* Willd. nom. illeg.)

Perennial herb or shrub, up to 3 m high. Leaves subcircular to ovate in outline, 3-lobed. Calyx lobes ovate to lanceolate. Bracts of epicalyx variously shaped but usually broadened somewhere near middle. *Flowers yellow with brownish or dark red centre; July to June.* In rainforest, riverine forest, thickets and grassland. *Van der Schijff* 3983.

W	S	C	N	E
---	---	---	---	---

cannabinus L.*

Annual herb, up to 2 m high. Stems aculeate. Leaves suborbicular in outline, 3–7-palmatisect or palmately lobed. Calyx lobes acuminate or long-acuminate; gland on calyx lobe conspicuous. *Flowers pale yellow, whitish or greyish with purple centre; November to May.* Weed of arable and waste land. Probably native to Africa. *Hardy* 6299.

W	S	C	N	E
---	---	---	---	---

coddii Exell

Subshrub, 1 m high. Indumentum $\pm$ tomentose and entirely hiding surface of lamina. Petals 5–10 mm long. Epicalyx 1–3 mm long. Staminal tube 6–9 mm long. *Flowers red; September to June*. Rocky outcrops. *Codd & Dyer 3850*.

W	S	C	N	E
---	---	---	---	---

dongolensis Delile

Perennial herb or shrub, up to 2 m high. Leaves glabrous or nearly so (sometimes with few bristles on nerves beneath), coarsely serrate or crenate-serrate. Epicalyx of 5 bracts, lorate or linear. *Flowers yellow with dark centre; August to May*. In woodland and on alluvial flats. *Van der Schijff 2922*.

W	S	C	N	E
---	---	---	---	---

engleri K. Schum.

(= *H. irritans* R.A. Dyer)

Herb, 1.0–1.5 m high, with coarse tomentum intermixed with yellowish irritant hairs. Epicalyx of 7–10 bracts, threadlike, not wider than 0.5 mm. *Flowers yellow with maroon or dark red centres; July to June*. Dry bush. *Codd & Dyer 7742*.

W	S	C	N	E
---	---	---	---	---

lunarifolius Willd.

Herb, 1 m high. Leaves pubescent and stellate-setose. Epicalyx of 5 bracts, elongate-triangular to linear-triangular, usually broadest at or near base. *Flowers yellow; November to April*. Hillsides and rocky places. *Codd 3737*.

W	S	C	N	E
---	---	---	---	---

marlothianus K. Schum.

Perennial herb, up to 500 mm tall. Leaves finely (often 3 times) divided, hispid, petiole $\pm$ the same length as central lobe of leaf. Epicalyx usually more than half length of calyx. *Flowers white or pink with dark purple centre; December to April*. Grassland. *Burt Davy 13098*.

W	S	C	N	E
---	---	---	---	---

mastersianus Hiern

Annual herb, up to 2 m high. Bracts of epicalyx forked. Stipules narrow, linear to filiform, not amplexicaul. Peduncle up to 8 mm long. *Flowers yellow to orange with purple or maroon centre; December, April to May*. Roadside weed. *Scheepers 327*.

W	S	C	N	E
---	---	---	---	---

meeusei Exell

(= *H. cannabinus* sensu Ulbr. & Fr. non L.)

Annual or biennial herb, up to 1.0(–1.5) m high. Stems shortly stellate-tomentose and aculeate. Leaf segments rhombic to oblanceolate. Calyx lobes usually ovate, only shortly acuminate, gland on calyx lobes not conspicuous. *Flowers yellow with dark red centre; February to May*. A ruderal species of roadsides, fallow and waste land. *Retief, Hernan & Schrire 9*.

W	S	C	N	E
---	---	---	---	---

meyeri Harv. subsp. **meyeri**

(= *H. mendoncae* Exell subsp. *mendoncae*)

Perennial herb or shrub, up to 2.0–2.5 m high. Leaves densely stellate-setose. Bracts of epicalyx 2–3 mm long. Petals 12–15 mm long. Free parts of filaments 0.5 mm long. Style branches 2–3 mm long. *Flowers white or pinkish or opening white and turning pink or purplish; November to April*. In woodland and on cultivated ground. *Coetzee 1390*.

W	S	C	N	E
---	---	---	---	---

meyeri Harv. subsp. **transvaalensis** (Exell) Exell

(= *H. mendoncae* Exell subsp. *transvaalensis* Exell)

Perennial herb or shrub, up to 2.0–2.5 m high. Leaves sparsely stellate-setulose or stellate-pubescent. Bracts of epicalyx 2–4 mm long. Petals, filaments and style as in subsp. *meyeri*. *Flowers white or pinkish or opening white and turning pink or purplish; July to June*. Rocky outcrops. *Killick & Strey 2526*.

W	S	C	N	E
---	---	---	---	---

micranthus L.f.

Shrub, up to 2.5 m high. Indumentum of young stems stellate-setulose, hairs projecting up to $\pm$ 0.5 mm. Petals 5–8 mm long. Epicalyx 1–3 mm long. Staminal tube 2.0–2.5 mm long. *Flowers white, pinkish or purplish; July to June*. Woodlands, often ruderal. *Marais 915*.

W	S	C	N	E
---	---	---	---	---

microcarpus Garcke

(= *H. malacospermus* (Turcz.) E. Mey.)

Herb, up to 300 mm tall. Leaves linear to very narrowly oblong or linear-elliptic, 5–11 times as long as broad, with few sharp teeth or deeply incised with narrow lobes. Bracts of epicalyx 10 mm long or longer. *Flowers yellowish, cream, white or purple; September to April*. Grassland or as weed. *Meeuse 9013*.

W	S	C	N	E
---	---	---	---	---

mutabilis L.*

Large shrub. Leaves suborbicular, 5–7-angled. Flowers large, 80–100 mm in diameter. Epicalyx with bracts free. Calyx much enlarged in fruit, not scarious, lobes united for $\pm$ a third of their length. *Flowers white at first, turning red; January*. Escaped from cultivation. Native to China. *Eliovson 26395*.

W	S	C	N	E
---	---	---	---	---

mutatus N.E. Br.

Shrub, up to 2.0–2.5(5.0) m high. Indumentum of branchlets composed of patent stellate hairs projecting $\pm$ 0.5 mm. Leaves 3-lobed. Petals 10–20 mm long. Free parts of filaments 0.5 mm long. *Flowers opening pure white and turning rose-pink; October and March*. Open woodland and bush. *Codd & Dyer 3882*.

W	S	C	N	E
---	---	---	---	---

palmaris Forssk.

(= *H. aristivalvis* Garcke,
= *H. intermedius* A. Rich.)

Prostrate perennial herb. Epicalyx of 7 or 8 bracts, filiform. Valves of capsule with 2–3 mm long awns. Seeds appressed-pubescent. *Flowers pale yellow or yellow, with or without dark centre; November to May.* Woodland, mainly on alluvial soils. *Van der Schijff 3405.*

W	S	C	N	E
---	---	---	---	---

pedunculatus L.f.

Perennial herb, 1–2 m high. Peduncles 40–120 mm long. Petals 30–45 mm long. Staminal tube 20–30 mm long. *Flowers pale lilac or pink; October to March.* Clearings in riverine forest. *Scheepers 873.*

W	S	C	N	E
---	---	---	---	---

physaloides Guill. & Perr.

Annual or perennial herb, up to 2 m high. Bracts of epicalyx threadlike, ± flexuous, not wider than 0.5 mm. Chalky incrustations present towards base of undersurface of leaf lamina, deeply palmatilobed. *Flowers yellow or yellowish orange with purplish or reddish centres; February to April.* Dry stony places. *Scheepers 633.*

W	S	C	N	E
---	---	---	---	---

platycalyx Mast.

(= *H. rogersii* Burt Davy,
= *H. seineri* Engl.)

Shrub, up to 2 m high. Leaves discolorous, greyish tomentose below. Epicalyx of 5 bracts, variously shaped but usually broadened near middle and narrowed to base. Calyx lobes ovate-acute. *Flowers yellow with dark reddish centre; January to April.* In forest and woodland. *Gerstner 6087.*

W	S	C	N	E
---	---	---	---	---

praeteritus R.A. Dyer

(= *H. micranthus* sensu Baker f.)

Perennial herb, up to 2 m high. Hairs on young stems closely appressed. Leaves sparsely stellate-pubescent or stellate-hispid. Petals 10–20 mm long. Free parts of filaments 0.5–1.0 mm long. Style branches 7–15 mm long. *Flowers red or pink; July to June.* Margins of rivers. *Story 4101.*

W	S	C	N	E
---	---	---	---	---

pusillus Thunb.

(= *H. atromarginatus* Eckl. & Zeyh.)

Perennial herb, 50–300 mm tall. Leaves not lobed to deeply 3–5-palmatisect, nearly glabrous to hispid, lobes narrowly elliptic to sharply toothed or pinnatifid. Petals 10–45 mm long. *Flowers yellow (rarely pink) with purple or crimson centre; September to May.* Mopane woods and among rocks. *Codd 5231.*

W	S	C	N	E
---	---	---	---	---

sabdariffa L.*

Annual herb, up to 1.5 m high, not aculeate. Calyx fleshy, edible. Bracts of epicalyx not clearly forked.

Flowers pale yellow with purplish brown centres. Escaped from cultivation. Native to tropical Africa. *Koch PRE 47657.*

W	S	C	N	E
---	---	---	---	---

sabiensis Exell

(= *H. micranthus* L.f. var. *hispidus* Cufod.)

Perennial herb, up to 1 m high. Young stems with an indumentum of stellate-hispid hairs projecting 1–2 mm. Leaves 5–7-nerved at base. Stipules 5–7 mm long. Petals 5.0 × 2.5 mm. Epicalyx of 5 or 6 bracts, 2 mm long. *Flowers white or pinkish; March.* In *Colophospermum mopane* woods on alluvium. *Schlechter 4591* (type).

W	S	C	N	E
---	---	---	---	---

saxatilis J.M. Wood & M.S. Evans

Shrub, up to 1 m high. Leaves ovate, 3–5-lobed, lobes acute, serrate, ciliate, stellate-hispid, glabrescent, 5–9-nerved from base. Peduncles longer than petioles. Epicalyx 8–10, oblong-ovate, ciliate. *Flowers white with dark centre.* Valleys. *Galpin 1225.*

W	S	C	N	E
---	---	---	---	---

schinzii Gürke

(= *H. cordatus* sensu J.G. García)

Prostrate or semiprostrate perennial herb. Leaves 3–5-lobed, cordate at base. Epicalyx of 7–9 bracts, filiform to very narrowly linear, not wider than 0.5 mm. *Flowers yellow (rarely white) with reddish purple centre; October to June.* Woodlands and grasslands. *Codd 4028.*

W	S	C	N	E
---	---	---	---	---

sidiformis Baill.

(= *H. ternatus* (Cav.) Mast.)

Annual herb, 0.6–1.0 m high. Stipules 1–2 mm long. Epicalyx absent. Calyx lobes longer than capsule. *Flowers white or pale yellow; November to May.* In river valleys, often on alluvial silt and in mopane woodland and thickets. *Meeuse 9200.*

W	S	C	N	E
---	---	---	---	---

subreniformis Burt Davy

Perennial herb or shrub, up to 1 m high. Leaves subreniform, densely stellate-tomentose, margin irregularly crenate. Petals 10–15 mm long. *Flowers pale yellow or orange-yellow; July to June.* In open woodland and on rock outcrops. *Codd 10457.*

W	S	C	N	E
---	---	---	---	---

surrattensis L.

Prostrate annual herb, climber or scrambler, with small recurved prickles on stems, petioles and peduncles. Bracts of epicalyx clearly forked. Stipules broad, auriculate and ± amplexicaul. *Flowers yellow with purple centre; November and March to June.* Cultivated ground and waste places. *Codd & De Winter 5552.*

W	S	C	N	E
---	---	---	---	---

trionum L.

Annual herb, up to 1.5 m high. Calyx inflated, scarious, enclosing capsule, lobes connate nearly to apex. *Flowers white, cream or yellow with purple centres; October to June*. Upland grasslands and a common weed of cultivated land and waste places. *Codd 2735*.

W	S	C	N	E
---	---	---	---	---

upingtoniae Gürke

Herb, 500 mm tall, with irritant hairs. Leaves pinnatifid. Epicalyx present. Calyx thin. *Flowers yellow; November to April*. Open woodland. *Nel 5556*.

W	S	C	N	E
---	---	---	---	---

vitifolius L. subsp. vitifolius

Perennial herb or shrub, up to 1.5 m high. Leaves and stems nearly glabrous to sparsely hairy. Leaves not lobed to deeply 3–5(–7)-lobed. Capsule winged or with prominent angles. *Flowers yellow with dark reddish or purple centre; February to April*. Rainforest. *Scheepers 249*.

W	S	C	N	E
---	---	---	---	---

vitifolius L. subsp. vulgaris Brenan & Exell

Perennial herb or shrub, up to 1.5 m high. Leaves and stems tomentose, densely pilose, pubescent or hispid, often glandular. Leaves not lobed to shallowly 3–7-lobed. Capsule winged or with prominent angles. *Flowers yellow with dark reddish or purple centre; August to May*. Woodlands, grasslands and roadsides, often on alluvial sands. *Meeuse 9731*.

W	S	C	N	E
---	---	---	---	---

waterbergensis Exell

Erect shrub, 1–2 m high, with a very fine tomentellum of minute stellate hairs. Leaves ovate or ovate-elliptic with serrate margins. Petals 15–20 mm long. Free parts of filaments up to 3–4 mm long. *Flowers red; November to April*. Rocky outcrops. *Theron 2137*.

W	S	C	N	E
---	---	---	---	---

Malva L. (s. Afr.: 7 spp.)

4992000

Meeuse. 1961. F.Z. 1: 501–503.
Bailey. 1977. Hortus Third: 701–702.

neglecta Wallr.*

Decumbent perennial herb. Leaves slightly lobed, 10–60 mm long, on 30–200 mm long petioles. Petal claws bearded. Mericarps 12–15, pilose. *Flowers white with mauve or purplish veins; October to January*. Open woodland or disturbed sites. Native to the Old World. *Louw 559*.

W	S	C	N	E
---	---	---	---	---

parviflora L.*

Prostrate or decumbent herb. Petals scarcely exceeding calyx, with glabrous claws. Mericarps with acutely angled reticular dorsal ridges, meeting laterally in

somewhat raised sharp edge. *Flowers mauve or pale pink to white; October to April*. Waste places and in parks and gardens. Native to Europe and Asia. *Mogg 16558*.

W	S	C	N	E
---	---	---	---	---

pusilla Sm.*

Herb, up to 200 mm tall. Leaves undivided to very shallowly lobed. Epicalyx bracts much narrower than sepals. Petals shorter than 15 mm, usually not more than twice as long as calyx. Mericarps 9–16, distinctly reticulately ridged on back, ± glabrous, edges often slightly raised but neither toothed nor overlapping adjoining mericarps. *Flowers white or pale mauve*. Native to Europe and Asia. *Burt Davy 1511*.

W	S	C	N	E
---	---	---	---	---

verticillata L. var. verticillata*

Biennial herb, 0.5–1.0 m high. Petal claws glabrous or with few weak hairs. Mericarps 10–12, glabrous. *Flowers white or purplish; October to January*. Damp, shady places. Native to Asia. *Theron 726*.

W	S	C	N	E
---	---	---	---	---

verticillata L. var. crispa L.*

Biennial herb, 0.5–1.0 m high. Like var. *verticillata* but leaves strongly crisped. *Flowers white or purplish; October*. Damp shady places. Native to Asia. *Moss 19711*.

W	S	C	N	E
---	---	---	---	---

Malvastrum A. Gray (s. Afr.: 1 sp.) 4995000

Meeuse 1961. F.Z. 1: 503.

coromandelianum (L.) Garcke*

Annual or biennial herb, up to 1 m high, sparsely covered with simple and 4-rayed stellate-strigose hairs. Leaves ovate, coarsely serrate. *Flowers yellow; October to June*. Along roadsides, on rubbish heaps and old cultivated lands. Native to North America. *Meeuse 10304*.

W	S	C	N	E
---	---	---	---	---

Modiola Moench (s. Afr.: 1 sp.) 4987000

Krapovickas. 1965. Fl. Prov. Buenos Aires 4: 185–187.

caroliniana (L.) G. Don*

(= *M. multifida* Moench)

Prostrate herb. Stems rooting at nodes. Stems and leaves scabrous. Leaves palmately lobed, lobes crenate. Carpels divided into 2 compartments by transverse partition. *Flowers red; September to January*. Disturbed sites; in wet shady places. Native to America. *Tölken 1105a*.

W	S	C	N	E
---	---	---	---	---

Pavonia Cav. (s. Afr.: 13 spp.) 5007000

Meeuse. 1961. F.Z. 1: 504–511.

Leistner. 1969. Bothalia 10: 74.

burchellii (DC.) R.A. Dyer(= *P. patens* (Andrews) Chiov.,= *P. macrophylla* E. Mey. ex Harv.)

Biennial or perennial herb or shrub, up to 1 m high. Epicalyx wheel-shaped, of 5(6) ovate-lanceolate or rhombic, spreading, basally connate bracts persisting as star-shaped structure under the fruit. Mericarps mucicous, dorsally keeled and verrucose to muricate. *Flowers white, pale yellow, cream or orange with or without reddish centre; July to June.* In light shade on a variety of soils. *Codd 5306.*

W S C N E

clathrata Mast.(= *P. schumanniana* Gürke & Schinz)

Perennial herb or shrub, 0.75–1.25 m high, often viscid and slightly scabrid. Leaves palmatipartite, segments 5, lanceolate or oblong-lanceolate, usually serrate. Epicalyx much longer than calyx. Mericarps winged. *Flowers pale yellow; December to February.* In woodland, stony soil. *Retief & Herman 162.*

W S C N E

columella Cav.(= *P. galpiniana* Schinz,= *P. meyeri* Mast.)

Biennial or perennial herb or shrub, 1–2 m high. Leaves lobed to ± the middle. Calyx lobes with 3 conspicuous longitudinal nerves. Epicalyx of 5 bracts, ± as long as calyx. Mericarps mucicous. *Flowers mauve, pink or rose; July to June.* Forest edges and clearings, riverine bush, etc. *Codd 6410.*

W S C N E

dentata Burt Davy

Small woody shrub, 0.5–1.5 m high, with yellowish grey subvelutinous indumentum. Leaves simple, cordate. Epicalyx 14–24 mm long, much longer than calyx. *Flowers white; July to June.* Savanna, on rocky slopes. *Leistner 3516.*

W S C N E

elegans Garcke

Soft perennial shrub, up to 1 m high. Epicalyx lobes 6–8, ± as long as calyx. Mericarps not apiculate, strongly muricate on dorsal side. *Flowers pale yellow; November.* Lowveld bush on sandy flats. *Codd 5703.*

W S C N E

leptocalyx (Sond.) Ulbr.(= *Hibiscus leptocalyx* Sond.,= *P. fruticulosa* Ulbr.)

Erect or low-spreading shrub, 0.2–0.9 m high. Leaves ovate, 3-lobed or subhastate, coarsely and irregularly serrate or dentate, discolorous. Epicalyx 9–11 bracts, 9–12 mm long, much longer than calyx. Mericarps not toothed on lateral angles. *Flowers white; October and January to May.* In semishade in forests, scrub, riverine

bush and gallery forests, on sandy and loamy alluvial soils. *Codd 8496.*

W S C N E

senegalensis (Cav.) Leistner(= *P. hirsuta* Guill. & Perr.)

Soft-stemmed shrub, up to 1.25 m high. Leaves suborbicular-reniform, not or only shallowly lobed, lobes rounded. Bracts of epicalyx 12–16, epicalyx ± as long as calyx. *Flowers pale or sulphur-yellow with portwine or maroon centre; January and February.* In woodland on sandy or loamy soils. *Meeuse 10486.*

W S C N E

transvaalensis (Ulbr.) A. Meeuse(= *P. commutata* P. Conrath)

Straggling shrub, up to 1 m high. Leaves palmatifid, lobes lanceolate and coarsely serrate. Staminal tube 8–11 mm long. Mericarps 6–8 mm long, with marginal ridges up to 0.5 mm broad. *Flowers yellow to pale yellow; November to May.* Bushveld in rocky or deep sandy soil. *Meeuse 9185.*

W S C N E

Radyera Bullock (s. Afr.: 1 sp.) 5013010

Phillips. 1944. J. S. Afr. Bot. 10: 33–35.

Bullock. 1957. Kew Bull. 3: 454.

urens (L.f.) Bullock(= *Allenia urens* (L.f.) E. Phillips,= *Hibiscus urens* L.f.)

Procumbent herb, densely stellate-tomentose. Leaves orbicular or ovate, deeply cordate, 7–9-nerved. Epicalyx of 12 linear tomentose lobes connate at base to form shallow basin. Calyx tube 20 mm long, lobes shorter. *Flowers claret-red.* Dry semikaroo areas. *Edwards 5.*

W S C N E

Sida L. (s. Afr.: 11 spp.) 4998000

Harvey. 1860. F.C. 1: 166–168.

Meeuse. 1961. F.Z. 1: 475–484.

acuta Burm. f.(= *S. carpinifolia sensu* Mast.)

Small shrub, up to 1(–3) m high. Leaves lanceolate, sharply serrate. Stipules 6–10 mm long. Flowers solitary or paired, pedicels 4–12 mm long. Mericarps 5 or 6, rugose, with 2 rigid pointed awns. *Flowers yellow; July to November and in April.* On cultivated land and along roadsides. *Van der Schijff 2680.*

W S C N E

alba L.

Annual or perennial herb, 0.30–0.75 m high. Petiole with hooked spur at base. Mericarps 5, with 2 awns, disintegrating at base to release seed. *Flowers white to yellow; September, October and January to May.* In

grassland and woodland types of vegetation on variety of soils. *Meeuse* 9572.

W S C N E

chrysantha *Ulbr.*

Perennial herb or shrub, up to 300 (rarely 600) mm tall. Leaves $\pm$ oblong, rounded to subacute at apex, distinctly discolorous. Mericarps without 2 awns, stellate-pubescent. *Flowers deep yellow to orange, occasionally paler; August to May.* On acid rocky slopes and soils derived from acid rocks, among grasses and low growing plants or in woodland in light shade. *De Winter* 2227.

W S C N E

cordifolia *L.*

(= *S. velutina* Willd. ex Spreng.)

Annual or perennial herb or shrub, 0.5–1.0 m high. Leaves broadly ovate- to suborbicular-subcordate. Flowers clustered in upper axils. Mericarps with 2 long erect awns covered with short, reflexed, stiff hairs. *Flowers yellow; September to May.* Woodland, open woodland, becoming weed in disturbed places. *Codd* 2744.

W S C N E

dregei *Burt Davy*

(= *S. lancifolia* Burt Davy,
= *S. longipes* E. Mey. ex Harv.)

Annual or biennial herb, up to 1 m high. Pedicels longer than 20 mm. Mericarps smooth, usually without awns; pericarp thin and papery, $\pm$ stellate-pubescent. *Flowers yellow to orange; July to June.* Forest margins, in light shade, among scrub or among herbaceous plants along streams, rivers, etc. on rocky and acid soils. *Acocks* 11284.

W S C N E

ovata *Forssk.*

(= *S. hoefleri* Gürke)

Small shrub, up to 500 mm tall. Leaves yellowish grey-green tomentose. *Flowers yellow; November to June.* Arid woodland, on deep sandy soils; also sometimes on brackish or alkaline soils or on lower mountainsides. *Meeuse & Strey* 10371.

W S C N E

pseudocordifolia *Hochr.*

(= *S. hislopii* Burt Davy & Greenway)

Small soft-stemmed shrub, up to 1.25 m high. Leaves broadly ovate to suborbicular, often slightly rhomboid. Flowers clustered in upper axils. Mericarps not awned. *Flowers yellow; February to October.* Lower mountainsides among scrub and tall herbs in forest edges and clearings. *Scheepers* 330.

W S C N E

rhombifolia *L.*

Annual or biennial herb or shrub, up to 1 m high. Leaves discolorous, rhomboid. Mericarps with 2 dis-

tinct suberect connivent awns, glabrous. *Flowers pale yellow to cream; October to June.* Pantropical, ruderal. *Hanekom* 1692.

W S C N E

serratifolia *R. Wilczek & Steyaert*

Perennial herb or shrub, 0.75–2.50 m high. Leaves $\pm$ lanceolate, attenuate and acute at apex, discolorous. Mericarps without awns. *Flowers yellow or golden yellow, sometimes with reddish centre; February.* Forest edges, clearings and scrub and on mountains. *Meeuse* 9803.

W S C N E

spinosa *L.*

Annual or weak perennial herb, up to 1 m high. Petiole armed at base with a hooked spur. *Flowers pale yellow; November to March.* Disturbed areas, weed. *Acocks* 12423.

W S C N E

ternata *L.f.*

(= *S. triloba* Cav.)

Herb, up to 500 mm tall. Leaves deeply 3-lobed. Flowers solitary on long slender pedicels. *Flowers white; August to May.* Shady, wet places, forest and stream-banks. *Scheepers* 919.

W S C N E

Sphaeralcea *A. St.-Hil.* (s. Afr.:

1 sp.)

4986000

Krapovickas. 1965. Fl. Prov. Buenos Aires 4: 217–218.

bonariensis (Cav.) Griseb.*

Shrub, 1.0–1.5 m high. Leaves entire or lobed. Inflorescence axillary. Carpels with 3 ovules. *Flowers pink to red; October and March.* Disturbed areas. Native of Argentina. *Phalatsé* 30.

W S C N E

Wissadula *Medik.* (s. Afr.: 1 sp.)

4985000

Meeuse. 1961. F.Z. 1: 499–501.

rostrata (*Schumach.*) Hook. f.

(= *W. amplissima* R.E. Fr. var. *rostrata* (Schumach.) R.E. Fr.)

Shrub, 0.75–1.25 m high. Leaves discolorous, apex long-caudate, base truncate to cordate. Pedicels 10–30 mm long, elongating to 60 mm in fruit. *Flowers cream or yellow; January to May.* Light shade on rocky and loamy soils and in riverine vegetation. *Codd* 5343.

W S C N E

MARTYNIACEAE

Herbs, prostrate, viscid-pubescent. Leaves opposite, undulate or lobed. Flowers bisexual, zygomorphic. Sepals 5. Corolla with tube basally cylindrical and campanulate or infundibular above, 5-lobed. Stamens 4, inserted on corolla. Ovary superior, 1-locular. Fruit a horned capsule.

Ibicella Van Eselt. (s. Afr.: 1 sp.) 7785010

Henderson & Anderson. 1966. Common weeds in South Africa: 300–301.

Bailey. 1977. Hortus Third: 588.

lutea (Lindl.) Van Eselt.*

(= *Proboscidea lutea* (Lindl.) Stapf)

Erect to prostrate herb, up to 500 mm tall. Leaves reniform, 5-nerved, glandular-pubescent. Inflorescence a

dense, terminal raceme. Fruit a cylindric-ovoid, woody capsule with slender curved beak, longer than spiny body. *Flowers greenish yellow outside, deeper yellow to orange inside, sometimes red-blotched; February to March.* Escaped from cultivation. Native of Brazil. *Galpin 13982.*

W S C N E

MELASTOMATACEAE

Trees, shrubs or herbs. Stems 4-angled. Leaves opposite, often with 3–9 prominent longitudinal veins. Flowers ± irregular, showy. Calyx tubular. Petals 4 or 5, free. Stamens the same number or twice as many as petals; anthers with elongated connectives and often sterile appendages, opening mostly by means of a terminal pore. Ovary inferior. Fruit a berry or capsule.

Key partly after Dyer, Gen. 1: 407 (1975).

- 1a Small herbs with setae; flowers congested; stamens equal **Antherotoma**
 1b Herbs or shrubs, usually with stiff hairs; flowers solitary or in short panicles; stamens unequal 2
 2a Calyx with conspicuous hexagonal pattern, each hexagon with bulbous-based seta **Heterocentron**
 2b Calyx without hexagonal pattern; setae/hairs scattered or dense **Dissotis**

Antherotoma Hook. f. (s. Afr.: 1 sp.) 5651000

Fernandes. 1978. F.Z. 4: 229–230.

naudinii Hook. f.

Delicate annual herb, up to 380 mm tall. Leaves opposite, sparsely appressed-setulose. *Flowers 4-merous, in terminal capitate cymes, surrounded at base by 2–4(5) leaves; pale mauve to pink; November to May.* Open forests, woodlands, shady places in damp thickets, grassland. *Codd 7896.*

W S C N E

Dissotis Benth. (s. Afr.: 5 spp.) 5659000

Fernandes. 1978. F.Z. 4: 243–264.

canescens (E. Mey. ex R.A. Graham) Hook. f.

(= *D. incana* (Naudin) Triana)

Perennial herb or shrub, 0.25–1.80 m high. Indumentum, at least on inflorescence, either of minute ± appressed stellate hairs or these and simple capitate-glandular hairs. Flowers 5-merous in racemiform or ± condensed panicles. Sepals persistent; intersepal segments present. *Flowers pink to bright purple; October to July.* In marshy situations in clearings, woodlands and forests mainly along streams. *Meeuse 9775.*

W S C N E

debilis (Sond.) Triana var. debilis

Perennial or rarely annual herb, 0.10–0.95 m high. Bristles of stems and branches short, appressed or subappressed, usually conspicuously bulbous at base, whitish. Flowers 4-merous in heads surrounded by uppermost leaves. Sepals persistent; intersepal segments present. *Flowers mauve to deep pink or rosy purple; November to May.* Swamps, moist places, rather dry sandy soils and as a weed of cultivated land. *Galpin 133101.*

W S C N E

phaeotricha (Hochst.) Hook. f. var. phaeotricha

Erect or sometimes ascending or prostrate perennial herb, up to 0.6 m high. Indumentum of stems not very dense, of fulvous, ± rigid, ± patent bristles. Flowers 4-merous, up to 20 mm in diameter, in heads surrounded by uppermost leaves. Sepals persistent; intersepal segments present. *Flowers mauve-pink; November to April.* Swamps and in moist places. *Codd 6451.*

W S C N E

princeps (Kunth) Triana var. princeps

Perennial herb or shrub, up to 3(–4) m high. Leaf lamina 5–7-nerved, with superior surface nearly

smooth and ± densely subappressed-setose. Flowers 5-merous, in dense cymes. Sepals caducous; intersepal segments present. *Flowers lilac to dark purple or violet, rarely white; March to August.* Rain forest, gallery forest and wooded grassland. *Codd 1678.*

W S C N E

Heterocentron *Hook. & Arn.* (s. Afr.): 1 sp.) 5642000
Bailey. 1977. Hortus Third: 558.

macrostachyum *Naudin**
(= *H. roseum* A. Braun & Bouché)

Densely pubescent, woody herb, 1,0–1,5 m high. Leaves elliptic to ovate, acute, entire. Flowers 4-merous, in few-flowered panicles. Petals minutely glandular-ciliate. Ovary with apical triangular scales. *Flowers pink or purple; August and March.* Grassland; an aggressive weed. Native of Mexico. *Myburgh 61.*

W S C N E

MELIACEAE

Trees, shrubs or shrublets. Leaves alternate, simple or mostly pinnately compound, without stipules. Flowers regular. Petals usually 4 or 5, free. Stamens 8–10, united into a cylindrical tube around style. Ovary superior; stigma often disc- or head-shaped. Fruit a capsule or drupe.

Key partly after White & Styles in F.S.A. 18,3: 39 (1986).

- 1a Leaves simple **Turraea**
- 1b Leaves compound 2
- 2a Leaves bipinnate; staminal tube purplish; fruit a drupe **Melia**
- 2b Leaves once-pinnate 3
- 3a Leaves imparipinnate; fruit a capsule with arillate seeds or a drupe 4
- 3b Leaves paripinnate; fruit a capsule with winged seeds 5
- 4a Staminal tube cup-shaped, filaments united at apex; fruit a drupe **Ekebergia**
- 4b Staminal tube elongate, filaments united only in upper half; fruit a capsule **Trichilia**
- 5a Capsule longer than 120 mm **Entandrophragma**
- 5b Capsule shorter than 60 mm, usually 20 × 8 mm **Toona**

Ekebergia *Sparrm.* (s. Afr.: 2 spp.) 4193000
White & Styles. 1963. F.Z. 2: 315–318.

capensis *Sparrm.*
(= *E. meyeri* Presl & C. DC.,
= *Trichilia ekebergia* E. Mey. ex Sond.)

Evergreen or semi-evergreen tree, up to 20 m high. Leaf rhachis not winged or very narrowly winged; leaflets 9–13, lanceolate to oblong-lanceolate, up to 145 × 60 mm. Drupe with 2–4 pyrenes. *Flowers white or pinkish white; August to November.* Forest. *Codd 6690.*

W S C N E

pterophylla (*C. DC.*) *Hofmeyr*

Shrub or small tree, up to 6 m high. Leaf rhachis broadly winged; leaflets 3–5, elliptic, obovate elliptic or oblanceolate-elliptic, up to 50 × 20 mm. Drupe up to 10 × 10 mm. *Flowers pinkish white; August to November.* Bushland, rocky slopes, forest margins. *Mohle 408.*

W S C N E

Entandrophragma *C. DC.* (s. Afr.: 2 spp.) 4163000
White & Styles. 1963. F.Z. 2: 289–293.

caudatum (*Sprague*) *Sprague*

Deciduous tree, up to 20 m high. Leaflets ovate to lanceolate, up to 110 × 35 mm, apex filiform-acuminate. Capsule cigar-shaped, 150–200 × 50 mm, valves brownish black. *Flowers pale green; August.* Bushveld, thicket, forest, sandy soil. *Van der Schijff 1308.*

W S C N E

Melia *L.* (s. Afr.: 1 sp.) 4175000
White. 1963. F.Z. 2: 315–318.

azedarach *L.**

Deciduous tree, up to 15 m high. Leaves 2- or 3-pinnate; leaflets lanceolate, up to 55 × 25 mm, apex acuminate, base asymmetrical. Inflorescence a panicle. Fruit a 3–8-locular drupe, yellow. *Flowers pale lilac; August to February.* Disturbed places. Native to India. *Nicholas & Bishop 2181.*

W S C N E

Toona (*Endl.*) *M. Roem.* (s. Afr.: 1 sp.) 4156000
Pennington & Styles. 1975. Blumea 22: 512.

ciliata *M. Roem.**

(= *Cedrela toona* Roxb. ex Rottler & Willd.)

Tree, up to 25 m high. Leaves pinnate; leaflets entire, lanceolate to ovate. Inflorescence paniculate. Capsule ± 20 mm long. *Flowers white; October*. Closed woodland, roadsides, invading bush and streambanks. Native to South America. *Henderson 641*.

W S C N E

Trichilia *P. Browne* (s. Afr.: 2 spp.) 4195000

White & Styles. 1963. F.Z. 2: 297–304.

dregeana *Sond.*

Evergreen tree, up to 20 m high. Leaflets 7–11, up to 210 × 85 mm. Capsule without a stipe or with an indistinct stipe up to 3 mm long. *Flowers greenish cream; October to November*. Forest. *Hemm 11, Scheepers 1251*.

W S C N E

emetica *Vahl*

Evergreen tree, up to 18 m high. Leaflets 9–11, up to 150 × 50 mm. Capsule sharply differentiated, with a 5–10 mm-long stipe. *Flowers light green; August to November*. Forest, woodland, wooded grassland, scrub forest. *Oakes & Scheepers 309*.

W S C N E

Turraea *L.* (s. Afr.: 6 spp.)

4171000

White & Styles. 1963. F.Z. 2: 307–315.

Pennington & Styles. 1975. *Blumea* 22: 456–458.

nilotica *Kotschy & Peyr.*

(= *T. randii* Baker f.)

Shrub or small tree, up to 6 m high. Branchlets of flowering specimens stout, usually more than 4 mm in diameter. Calyx cup-shaped. Petals up to 22 mm long. Staminal tube bearded at throat. *Flowers greenish white; August to September*. Bushveld, lowveld, scrub and woodland. *Acocks 12892*.

W S C N E

obtusifolia *Hochst.*

(= *T. oblancifolia* Bremek.,

= *T. obtusifolia* Hochst. var. *microphylla* C. DC.)

Shrub, up to 5 m high. Leaves mostly fascicled, lamina up to 50 mm long, glabrous beneath. Calyx cup-shaped. Petals longer than 30 mm. Capsule 5-valved, thinly woody. *Flowers white; November to April*. Bushveld, woodland, wooded grassland, rocks. *Van der Schijff 4115*.

W S C N E

MELIANTHACEAE

Shrublets, shrubs or small trees. Leaves alternate, pinnate; with intrapetiolar stipules, often large. Flowers usually bisexual, irregular, racemose. Calyx of 5 unequal segments. Petals 5, free, clawed. Disc present. Stamens 4, inserted within disc, free or connate. Ovary superior, 4- or 5-locular. Fruit a papery, leathery or woody capsule.

Key after Dyer, Gen. 1: 344 (1975).

Calyx subequal at base; ovules 1 in each loculus; tree **Bersama**
Calyx very oblique at base; ovules 2–4 in each loculus; shrub **Melianthus**

Bersama *Fresen.* (s. Afr.: 5 spp.) 4853000

White. 1966. F.Z. 2: 544–547.

Coates Palgrave. 1977. *Trees of southern Africa*: 543–547.

lucens (*Hochst.*) *Szyszl.*

(= *Natalia lucens* Hochst.)

Shrub or small to medium-sized tree, up to 10 m high. Leaves with 1–3 pairs of leaflets, plus terminal leaflet. Fruit a spherical, hairy capsule up to 20 mm in diameter, wrinkled. *Flowers white or yellow; December to February*. Rocky places, often in crevices. *Van Wyk 6926*.

W S C N E

transvaalensis *Turrill*

Tree, up to 10 m high. Leaflets with velvety hairs, at least on undersurface. Flowers in rather lax racemes up to 150 mm long. Fruit warty. *Flowers creamy white; October to November*. Evergreen forest. *Deall 10*.

W S C N E

tysoniana *Oliv.*

Shrub or small to medium-sized tree, up to 10 m high. Leaflets without hairs on either surface. Bracts conspicuous. Flowers in racemes longer than 50 mm. Fruit a spherical capsule covered with woody protuberances. *Flowers greenish white to cream; October to December*. Forest margins, bush clumps. *Van Wyk & Theron 4907*.

W S C N E

Melianthus *L.* (s. Afr.: 6 spp.)

4854000

Dyer. 1959. *Flower. Pl. Afr.* 33: t. 1310.

Tansley & Schelpe. 1984. *Bothalia* 15: 143–145.

dregeanus *Sond.* subsp. **insignis** (*Kuntze*) *Tansley*

(= *M. insignis* Kuntze)

Shrub, up to 2 m high. Leaves pinnate, 100–240 × 15–28 mm, margins deeply toothed, upper surface stellately pubescent, midrib and lateral veins on lower surface albotomentose. *Flowers maroon; November to January*. Forest margins. *Galpin 9883*.

W S C N E

MENISPERMACEAE

Scandent shrubs, woody climbers or herbaceous twiners, dioecious. Leaves alternate, simple, sometimes peltate, rarely trifoliolate. Flowers usually small and inconspicuous. Sepals 3–12, free. Petals 1–6, free or connate. Stamens 3–6(–many), free or united. Carpels 3–6(–more), free. Fruit with each carpel drupaceous.

Key partly after Troupin in F.Z. 1: 150–151 (1960).

- 1a Leaves peltate, carpel 1 2
- 1b Leaves not peltate 3
- 2a Bracts minute, not enlarged in fruit; sepals 3–6; petals 2–4, free *Stephania*
- 2b Bracts conspicuous, enlarged in fruit, membranous or leafy; sepals 1; petals 1 *Cissampelos*
- 3a Carpels 8–40; sepals thick *Tiliacora*
- 3b Carpels 1–6; sepals thin 4
- 4a Carpels 1 *Antizoma*
- 4b Carpels 3–6 5
- 5a Flowers numerous, in ± elongate and compound inflorescences *Tinospora*
- 5b Flowers solitary or in fasciculate cymes *Cocculus*

Antizoma Miers (s. Afr.: 2 spp.) 2573000

Botha. 1980. JI S. Afr. Bot. 46: 2.

angustifolia (Burch.) Miers ex Harv.

(= *A. harveyana* Miers ex Harv.)

Climbing perennial herb. Leaves glabrous to hairy, narrowly elliptic, petiole short, armed with short, obtuse, reflexed spine. *Flowers yellowish green; December to April*. Open woodland, sandy soil. *Van Wyk 5959*.

W S C N E

Cissampelos L. (s. Afr.: 4 spp.) 2574000

Troupin. 1960. F.Z. 1: 165.

Botha. 1980. JI S. Afr. Bot. 46: 5.

mucronata A. Rich.

(= *C. macrostachya* Klotzsch,

= *C. pareira* L. var. *mucronata* (A. Rich.) Engl.)

Climber with slender, twining stems. Branchlets pubescent to puberulous. Leaves heart-shaped to subreniform, obtuse at apex, deeply cordate at base. *Flowers green; July to March*. Shrubland, riverbanks. *Van der Schijff 1988*.

W S C N E

torulosa E. Mey. ex Harv.

(= *Menispermum capense* Thunb.)

Climber with slender, twining stems. Branchlets sparsely pilose or glabrescent. Leaves subreniform, rounded at apex, auriculate and attenuate at base. *Flowers greenish white; October to April*. Grassland, forest, riverbanks. *Retief et al. 1124*.

W S C N E

Cocculus DC. (s. Afr.: 1 sp.) 2570000

Troupin. 1960. F.Z. 1: 163.

hirsutus (L.) Diels

(= *C. villosus* DC.,

= *Menispermum hirsutum* L.)

Twining, woody creeper. Leaves pubescent, ovate, veins conspicuous, apex obtuse and mucronulate. *Flowers yellowish green; February to June*. Woodland. *Herman 758*.

W S C N E

Stephania Lour. (s. Afr.: 1 sp.) 2572000

Troupin. 1960. F.Z. 1: 169.

abyssinica (Quart.-Dill. & A. Rich.) Walp. var. *abyssinica*

Perennial climber with long, slender, herbaceous stems. Young branchlets, petioles, lower sides of leaves, inflorescences and sepals (partly) glabrous. Leaves palmate. *Flowers cream; December to May*. Forest. *Van Wyk 5511*.

W S C N E

abyssinica (Quart.-Dill. & A. Rich.) Walp. var. *tomentella* (Oliv.) Diels

(= *Cissampelos umbellata* E. Mey. ex Miers,

= *S. hernandifolia* (Willd.) Walp. var. *tomentella* Oliv.)

Herbaceous perennial climber. Young branchlets, petioles, lower surfaces of leaves, inflorescences and sepals ± densely pubescent to tomentose. Leaves palmate. *Flowers cream; November to January*. Forest, shrubland, streambanks. *Balsinhas 2959*.

W S C N E

Tiliacora Colebr. (s. Afr.: 1 sp.) 2577000

Troupin. 1960. F.Z. 1: 153.

funifera (Miers) Oliv.

(= *Hypserpa funifera* Miers)

Climber. Leaves ovate, 3–5-nerved, coriaceous, petiole with a swelling where it joins the lamina. *Flowers white; August*. Woodland. *Nel 235*.

W S C N E

Tinospora Miers (s. Afr.: 3 spp.) 2583000

Troupin. 1960. F.Z. 1: 159.

fragosa (I. Verd.) I. Verd. & Troupin(= *Desmonema fragosum* I. Verd.)

Robust creeper with succulent stems. Lateral branches much abbreviated and swollen. Leaves ovate-cordate, greyish green. *Flowers greenish yellow; July to September.* Bushveld, riverbanks. *Dyer 4321.*

W S C N E

tenera Miers

(= *Desmonema tenerum* (Miers) Diels,
= *T. stuhlmannii* Engl.)

Creeper with succulent stems. Leaves broadly ovate to suborbicular, pale green, leathery. Inflorescences 100–350 mm long, drooping. *Flowers greenish yellow; December to January.* Bush clumps, rocky hillsides. *Codd & De Winter 5151.*

W S C N E

MENYANTHACEAE

Aquatic herbs with tufted rootstock or horizontal creeping rhizomes. Leaves floating or submerged, alternate or in a rosette, simple or compound, entire or crenulate; stipules small, rounded, scarious or inconspicuous. Flowers in panicles, racemes, fascicles or solitary, actinomorphic, generally 5-merous. Sepals free or almost so, imbricate in bud. Corolla gamopetalous, often with a short tube, lobes membranous, often fimbriate or pilose. Stamens as many as corolla lobes and alternating with them. Ovary superior, unilocular, with 2(–5) parietal placentas. Fruit a capsule, dehiscent or not. Seeds numerous.

Nymphoides Hill (s. Afr.: 5 spp.) 6545000Raynal. 1974. *Adansonia* 14: 405–446.**indica** (L.) Kuntze subsp. **occidentalis** A. Raynal

Perennial herb, stoloniferous hydrophyte, usually without adventitious roots at base of flower glomerule. Flowers numerous in each glomerule, attached some distance away from leaf sinus. Capsule ovoid-acuminate. *Flowers white with yellow eye; December to April and in July.* In still to slow-flowing water; in sheltered areas in pans, dams and rivers. *Steynberg 28.*

W S C N E

rautanenii (N.E. Br.) A. Raynal

Annual, rarely perennial herb, hydrophyte. Leaves soft, glaucous green. Flowers 10–15 in a glomerule, at-

tached to leaf sinus, small, 8–10 mm in diameter. Capsule globose. *Flowers yellow; December and May to July.* In temporary pools or in depressions along rivers. *Codd 6073.*

W S C N E

thunbergiana (Griseb.) Kuntze

Perennial herb, hydrophyte, from short erect rhizome. Flower glomerules usually with adventitious roots. Flowers numerous in each glomerule, attached some distance away from leaf sinus. Capsule oblong-ovoid, obtuse. *Flowers yellow; August to April.* In still to slow-flowing water; in pans, rivers or streams. *Venter 3485.*

W S C N E

MESEMBRYANTHEMACEAE

Succulent herbs or shrublets. Leaves opposite, without stipules. Flowers regular. Calyx tube with 4–6 lobes, attached to ovary. Petals numerous, free. Stamens numerous, free. Ovary inferior, usually 5-locular; styles absent; stigmas ± the same number as locules. Fruit a many-seeded capsule, opening by means of valves.

Key to genera of family Mesembryanthemaceae after P. Hartzer (pers. comm.).

- 1a Nectaries in flower koilomorphic, i.e. shell-shaped, and always separate; ovary always with an axile placenta; fruit with expanding keels of purely septal origin, reaching from central columella to tip of valve **Aptenia**
- 1b Nectaries in flower lophomorphic, i.e. crest-shaped, either as separate glands or united into a ring; ovary with parietal to basal placentation; fruit with expanding keels mostly of valvar origin, with only a small septal portion near outer rim of locule, and never reaching centre of fruit 2
- 2a Perennial dwarf window plants, with plant body mostly subterranean 3
- 2b Perennial prostrate or compact plants or upright shrubs 4
- 3a Leaves alternate, very small (shorter than 10 mm) and distinctly papillate **Frithia**
- 3b Leaves connate, forming a cone with a truncate apex, the apex with different markings like islands, channels, windows or dots, surface smooth **Lithops**

- 4a Dwarf, prostrate or creeping plants, with branches forming a low mat, leaf epidermis finely warty 5
 4b Compact mat-forming plants, or shrubs 6
 5a Flowers solitary, white and nocturnal *Mossia*
 5b Flowers solitary, golden yellow with reddish tips, opening in the daytime, around noon *Chasmatophyllum*
 6a Compact tufted dwarf plants with enlarged rootstock 7
 6b Loosely branched shrubs or herbs with or without enlarged rootstock 9
 7a Flowers yellow, opening in the afternoon *Nananthus*
 7b Flowers white, pink, magenta or purple, opening in sunlight or only after noon 8
 8a Capsules 5–11-locular, without valve wings *Khadia*
 8b Capsules 5-locular, with broad valve wings *Ebracteola*
 9a Capsule with covering membranes absent or declining into the empty locule *Delosperma*
 9b Covering membrane persistent in shape 10
 10a Valve wings absent, closing bodies small, rodlet-shaped *Ruschia*
 10b Valve wings present, broad, closing bodies absent *Mestoklema*

The family Mesembryanthemaceae is under revision; therefore only a list of the species occurring in the area is given in collaboration with P. Hartzler (pers. comm.).

***Aptenia* N.E. Br. (s. Afr.: 2 spp.) 2405009**

Jacobsen. 1970. Lex. Succ. Plants: 407.

cordifolia (L.f.) *Schwantes* var. *cordifolia*

lancifolia L. *Bolus*

***Chasmatophyllum* Dinter & Schwantes
(s. Afr.: 6 spp.) 2405026**

Dinter & Schwantes. 1927. Zeitschr. für Sukkulantenk. 3: 15, 17.

musculinum (Haw.) *Dinter & Schwantes*

***Delosperma* N.E. Br. (s. Afr.: 161 spp.) 2405033**

Koutnik & O'Connor-Fenton. 1985. S. Afr. J. Bot. 51: 197–198.

annulare L. *Bolus*

carolinense N.E. Br. var. *carolinense*

cronemeyerianum (A. Berger) *Jacobsen*

davyi N.E. Br.

herbeum (N.E. Br.) N.E. Br.

hirtum (N.E. Br.) *Schwantes*

jansei N.E. Br.

knox-daviesii *Lavis*

lebombense (L. *Bolus*) *Lavis*

leendertziae N.E. Br.

liebenbergii L. *Bolus*

lydenburgense L. *Bolus* var. *lydenburgense*

lydenburgense L. *Bolus* var. *acutipetalum* L. *Bolus*

macellum (N.E. Br.) N.E. Br.

mahonii (N.E. Br.) N.E. Br.

minimum *Lavis*

pachyrhizum L. *Bolus* var. *pubescens* L. *Bolus*

pontii L. *Bolus*

pottsii (L. *Bolus*) L. *Bolus*

rileyi L. *Bolus*

subincanum (Haw.) *Schwantes*

sutherlandii (Hook. f.) N.E. Br.

taylorii (N.E. Br.) L. *Bolus* var. *albanense* L. *Bolus*

tradescantioides (A. Berger) L. *Bolus*

vandermerwei L. *Bolus*

vogtsii L. *Bolus*

waterbergense L. *Bolus*

zeederbergii L. *Bolus*

zoeae L. *Bolus*

zoutpansbergense L. *Bolus*

***Ebracteola* Dinter & Schwantes
(s. Afr.: 5 spp.) 24050043**

Dinter & Schwantes. 1927. Zeitschr. für Sukkulantenk. 3: 15, 24.

wilmaniae (L. *Bolus*) *Glen*

***Frithia* N.E. Br. (s. Afr.: 1 spp.) 2405051**

Jacobsen. 1970. Lex. Succ. Plants: 477.

pulchra *N.E. Br.* var. **pulchra****Khadia** *N.E. Br.* (s. Afr.: 6 spp.) 2405065

Jacobsen. 1970. *Lex. Succ. Plants*: 489.
Chesselet & Hartmann. 1995. *Aloe* 32,2: 46–49.

acutipetala (*N.E. Br.*) *N.E. Br.***alticola** Chesselet & H.E.K. Hartmann**beswickii** (*L. Bolus*) *N.E. Br.***borealis** *L. Bolus***carolinensis** (*L. Bolus*) *L. Bolus***nationae** (*N.E. Br.*) *N.E. Br.***nelsoniae** *N.E. Br.***Lithops** *N.E. Br.* (s. Afr.: 39 spp.) 2405069

Cole. 1980. *Lithops*, flowering stones: 99–239.
Hammer & Uijs. 1994. *Aloe* 31,2: 36–38.

aucampiae *L. Bolus* var. **aucampiae****coleorum** *S.A. Hammer & R. Uijs***lesliei** (*N.E. Br.*) *N.E. Br.* var. **lesliei** forma **lesliei****lesliei** (*N.E. Br.*) *N.E. Br.* var. **lesliei** forma **albiflora**
*D.T. Cole***lesliei** (*N.E. Br.*) *N.E. Br.* var. **minor** *De Boer***lesliei** (*N.E. Br.*) *N.E. Br.* var. **rubrobrunnea** *De Boer***lesliei** (*N.E. Br.*) *N.E. Br.* var. **venteri** (*Nel*) *De Boer & Boom***Mestoklema** *N.E. Br. ex Glen* (s. Afr.: 6 spp.) 2405074

Jacobsen. 1970. *Lex. Succ. Plants*: 524.
Glen. 1981. *Bothalia* 13: 454–455.

arboriforme (*Burch.*) *N.E. Br. ex Glen***Mossia** *N.E. Br.* (s. Afr.: 1 sp.) 2405080

Jacobsen. 1970. *Lex. Succ. Plants*: 529.

intervallaris (*L. Bolus*) *N.E. Br.***Nananthus** *N.E. Br.* (s. Afr.: 10 spp.) 2405084

Jacobsen. 1970. *Lex. Succ. Plants*: 529.

broomii (*L. Bolus*) *L. Bolus***transvaalensis** (*Rolfe*) *L. Bolus* var. **transvaalensis****transvaalensis** (*Rolfe*) *L. Bolus* var. **latus** *L. Bolus***Ruschia** *Schwantes* (s. Afr.: 348 spp.) 2405105

Jacobsen. 1974. *Lex. Succ. Plants*: 522–542.

canonotata (*L. Bolus*) *Schwantes***intricata** (*N.E. Br.*) *H.E.K. Hartmann & Stueben***ruralis** (*N.E. Br.*) *Schwantes***MORACEAE**

Trees or shrubs, with milky latex or watery sap. Leaves alternate, with stipules. Flowers tiny, unisexual, enclosed in hollow, vase-like receptacle (a 'fig') or in dense heads or spikes. Fruit a small nut or drupe borne inside (e.g. fig) or outside (e.g. mulberry) receptacle.

Key after Dyer, *Gen.* 1: 33 (1975).

- 1a Flowers in dense, globose heads; climbing shrub or small tree, often spiny **Maclura**
1b Flowers in a completely closed or open receptacle 2
2a Receptacle campanulate or obconic, wide open at top; flowers exerted **Trilepisium**
2b Receptacle mostly fleshy, hollow, globose or obovoid, closed at top except for small ostiole (mouth), bracteate within **Ficus**

Ficus *L.* (s. Afr.: 25 spp.) 1961000

Von Breitenbach. 1974. *Trees in South Africa* 26: 58–80.
Coates Palgrave. 1977. *Trees of southern Africa*: 104–119.
Van Greuning. 1990. *S. Afr. J. Bot.* 56: 599–630.

abutifolia *Miq.*

(= *F. soldanella* Warb.)

Shrub or small tree, up to 8 m high. Leaves roundly heart-shaped, deeply cordate to lobed at base, margins very wavy, apex acute. Figs sessile (but sometimes with

a 'neck'), finely hairy, up to 25 mm in diameter, red with white markings. Bushveld, stony and rocky hillsides, rocky outcrops. *Theron 964*.

W S C N E

capreifolia *Delile*

Shrub or small slender tree, up to 7 m high. Leaves scabrous on both sides, margins uneven to irregularly scalloped, oblong. Figs stalked, 10–20 mm in diameter, scabrid. Riverbanks. *Codd 6688*.

W S C N E

cordata *Thunb.* subsp. **salicifolia** (*Vahl*) *O. Berg*

(= *F. pretoriae* Burt Davy,
= *F. salicifolia* Vahl)

Shrub or small tree, up to 8 m high. Leaves ovate to oblong, rounded to cordate at base, apex rounded to broadly acute, margin entire. Figs stalked, 6–8 mm in diameter, creamy pink to red with white markings. Rocky hills and outcrops, sandy soil. *Van Hoepen 1800*.

W S C N E

craterostoma *Warb. ex Mildbr. & Burret*

Medium-sized to large tree, up to 20 m high. Leaves short-stalked, lamina 40–80 × 20–30 mm, obovate-oblong or triangular-obovate, pointed to rounded or truncate to emarginate at apex. Figs paired in leaf axils, usually stalkless, roundish, up to 15 mm in diameter, yellow to red when ripe. Forest. *Buitendag 1234*.

W S C N E

glumosa (*Miq.*) *Delile*

(= *F. sonderi* Miq.)

Tree, up to 10 m high. Leaves broadly ovate to elliptic, apex rounded to bluntly acute, margin entire but often wavy, permanently hairy beneath, becoming smooth with age above. Figs sessile, up to 15 mm in diameter, red with white markings. Bushveld, rocky outcrops, stony hillsides, rocky ridges. *Mugwedi 1555*.

W S C N E

ingens (*Miq.*) *Miq.* var. **ingens**

Small to medium-sized tree or subshrub, up to 10 m high. Leaves ovate, bluntly pointed at apex, cordate to rounded at base, margin entire. Spring foliage a vivid red or reddish brown. Figs stalked, round, up to 10 mm in diameter, creamy pink to red with white markings. Bushveld, rocky hillsides, kloofs. *Van der Schijff 1943*.

W S C N E

natalensis *Hochst.* subsp. **natalensis**

Medium-sized tree or strangler up to 15 m high. Leaves obovate-oblong, smooth, rounded at apex, margin entire, 7 or 8 lateral nerves prominent. Figs stalked, round,

up to 15 mm in diameter, yellow to red. Bushveld and forest. *Van Wyk & Theron 4898*.

W S C N E

sansibarica *Warb.* subsp. **sansibarica**

(= *F. brachylepis* Welw. ex Hiern,
= *F. gosseweileri* Hutch.)

Medium-sized to large tree, up to 20 m high. Leaves elliptic, smooth, margin entire, base and apex rounded, apex often with a drip-tip. Figs in fascicles on main branches and trunk, stalked, up to 50 mm in diameter, purple with large yellow markings. Sandy or stony places, anthills. *Codd 6885*.

W S C N E

stuhlmannii *Warb.*

Medium-sized tree or strangler, up to 10 m high. Leaves elliptic to obovate-elliptic, permanently hairy on both surfaces, veins prominent on undersurface. Figs sessile, hairy, up to 15 mm in diameter, reddish green with pale markings. Woodland and bushveld, sandy loam soil. *Zambatis 1728*.

W S C N E

sur *Forssk.*

(= *F. capensis* Thunb.,
= *F. malloioarpa* Warb.)

Large tree, up to 25 m high. Leaves ovate to ovate-elliptic, glabrous, margin entire or distantly and bluntly dentate. Figs in long clusters on main branches and trunk, stalked, up to 40 mm in diameter, yellow and rosy. Streambanks and riverbanks, wooded kloofs. *Van Greuning 531*.

W S C N E

sycomorus *L.*

(= *F. exasperata* Vahl)

Tree, up to 25 m high. Leaves ovate-rotund to elliptic, margin unevenly to irregularly scalloped, rough above, hairy beneath. Figs in densely branched clusters on main branches and trunk, stalked, 25–30 mm in diameter, softly hairy, pink to orange-red. Banks of rivers and streams. *Scheepers 1128*.

W S C N E

tettensis *Hutch.*

(= *F. smutsii* I. Verd.)

Small tree, up to 7 m high. Leaves heart-shaped, usually broader than long, densely hairy on both surfaces. Figs sessile, hairy, up to 10 mm in diameter, red when ripe. Over and between rocks. *Hardy 888*.

W S C N E

thonningii *Blume*

(= *F. burkei* (Miq.) Miq.,
= *F. petersii* Warb.)

Small to medium-sized tree, up to 15 m high. Leaves obovate, glabrous, petiolate. Figs shortly stalked, hairy, up to 10 mm in diameter, yellowish to greyish brown. Bushveld and woodland. *Venter 11200*.

W S C N E

Maclura Nutt. (s. Afr.: 1 sp.) 1918000

Corner. 1962. Gdns' Bull., Singapore 19: 235–240.

africana (Bureau) Corner
(= *Cardiogyne africana* Bureau)

Shrub or small tree, up to 8 m high, often scrambling, spiny. Fruit a head of small nutlets, each surrounded by persistent perianth parts: thick and fleshy, forming a pulp, greyish. *Flowers white; September to May*. Riverbanks. *Strey* 3999.

W	S	C	N	E
---	---	---	---	---

Trilepisium A. Thouars (s. Afr.: 1 sp.) 1960010

Coates Palgrave. 1977. Trees of southern Africa: 102.
Berg *et al.* 1984. Fl. Gabon 26: 104–108.

madagascariense DC.
(= *Bosquiea phoberos* Baill.)

Tree, up to 20 m high. Leaves simple, apex broadly tapering to rounded. Male flowers many, perianth absent, stamens long, creamy white, protruding from apical mouth and forming a puff 10 mm in diameter. *Flowers white; August*. Riverine forest. *Netshiungani* 653.

W	S	C	N	E
---	---	---	---	---

MYRICACEAE

Trees or shrubs, often $\pm$ aromatic and dotted with golden yellow glandular hairs. Leaves alternate, without stipules. Flowers unisexual, male and female on the same or separate plants, stalkless and borne in spikes. Perianth absent. Stamens with very short filaments. Ovary superior, 1-locular, with a single ovule; stigmas 2. Fruit often rough or warty and covered with layer of wax.

Myrica L. (s. Afr.: 9 spp.) 1874000

Killick. 1969. Bothalia 10,1: 5–17.

pilulifera Rendle

(= *M. pilulifera* Rendle var. *puberula* Rendle,
= *M. rogersii* Burtt Davy)

Tree or shrub, up to 30 m high with girth up to 300 mm. Leaves broadly cuneate to round at base, distinctly petiolate, blade 32–65 mm long. *Catkins green, tinged with purple. Flowering July to October*. Along forest

margins, streambanks and in rock crevices. *Morris* 5;
Botha 2062.

W	S	C	N	E
---	---	---	---	---

serrata Lam.

(= *M. mossii* Burtt Davy)

Tree or shrub, up to 6 m high. Leaves narrowly attenuate at base, 50–100 mm long, smooth, gland-dotted. *Catkins light green. Flowering July to June*. Streambanks. *Codd* 10209.

W	S	C	N	E
---	---	---	---	---

MYROTHAMNACEAE

Woody shrublets, resinous. Leaves opposite, petiole sheathing at base, forming a joint with the blade, with stipules. Flowers unisexual, male and female on separate plants, densely clustered in erect spikes. Calyx and corolla absent. Stamens usually 5, filaments united at base. Ovary superior, 3-lobed with 3 free styles. Fruit a capsule.

Myrothamnus Welw. (s. Afr.: 1 sp.) 3282000

Weimarck. 1936. Bot. Notiser 26: 451–462.
Mendes. 1978. F.Z. 4: 68–71.

flabellifolius (Sond.) Welw.
(= *Cliffortia flabellifolia* Sond.)

Woody shrublet, up to 0,6 m high. Leaves opposite, sessile, cuneate, flabelliform (fan-shaped) but plaited

when dried out, 6- or 7-crenate on subtruncate apex. *Flowers green to deep pink; November to May*. Amongst granite or sandstone rocky outcrops, crevices with shallow soil. *Fourie* 2677.

W	S	C	N	E
---	---	---	---	---

MYRSINACEAE

Trees or shrubs. Leaves alternate, $\pm$ gland-dotted, without stipules. Flowers small, regular, borne in clusters. Petals 4 or 5, usually united towards base. Stamens as many as and opposite the petals; filaments attached to corolla. Ovary superior, 1-locular. Fruit a berry or drupe.

Key after Dyer in F.S.A. 26: 1 (1963).

- 1a Ovary inferior or half inferior; seeds many; petals united; fruit crowned by persistent calyx **Maesa**
- 1b Ovary superior; seeds solitary **2**
- 2a Filaments developed, sometimes very short, united at base by a membrane; leaves usually 10–40 mm long, twigs thin and woody **Myrsine**
- 2b Filaments obsolete or very nearly so; leaves up to 120 mm long, and then oblanceolate; twigs thickish and soft when young **Rapanea**

Maesa Forssk. (s. Afr.: 2 spp.) 6283000
Dyer. 1963. F.S.A. 26: 1–2.
Taton. 1980. Bull. Jard. bot. nat. Belg. 50: 208–218.
Kupicha. 1983. F.Z. 7,1: 198–201.

lanceolata Forssk.
(= *M. angolensis* Gilg,
= *M. lanceolata* Forssk. var. *rufescens* (A. DC.) Taton)
Small tree or shrub, higher than 7 m. Leaves elliptic to ovate-elliptic, slightly or coarsely toothed, mature leaves usually 80–120 mm long. Panicles much-branched. *Flowers white or cream; October to July.* Common in bush groups and at forest margins. *Hemm 52* (flowers), *Codd 6530* (fruits).

W S C N E

Myrsine L. (s. Afr.: 2 spp.) 6313000
Dyer. 1963. F.S.A. 26: 5–6.

africana L.
Erect evergreen shrub, 1–2 m, rarely up to 3 m high. Leaves rounded and often obtuse, usually shorter than 20 mm and 10 mm broad. Anthers exerted beyond

corolla lobes, elliptic-oblong, pink or red. *Corolla cream; anthers and ovary red; April to December.* In bush groups on mountains. *Codd 10083.*

W S C N E

pillansii Adamson
Shrub, up to 3 m high. Leaves rhombic or elliptic, up to 50 mm long and 22,5 mm broad. Anthers included within corolla lobes, sagittate, brown. *Flowers cream; September.* Low shrub or bush. *Moss 19775.*

W S C N E

Rapanea Aubl. (s. Afr.: 2 spp.) 6314000
Dyer. 1963. F.S.A. 26: 8–9.

melanophloeos (L.) Mez
(= *Myrsine melanophloeos* (L.) R. Br.)
Tree, 3–20 m high. Leaves oblong or oblong-lanceolate, flat, 50–70 mm long, glands usually inconspicuous. Fruits globose, up to ± 5 mm in diameter. *Flowers cream; April to December.* In ravines or a component of medium or high forest. *Mohle 431.*

W S C N E

MYRTACEAE

Trees and shrubs, most parts gland-dotted. Leaves alternate or opposite, without stipules. Flowers regular, usually with showy stamens. Petals 4 or 5, free, or united with calyx to form a lid (operculum) covering flower in bud. Stamens numerous, free. Ovary inferior. Fruit a capsule or berry.

Key partly after Dyer, Gen. 1: 404–405 (1975).

- 1a Ovary superior, 2(or 3)-locular; fruit a capsule, dehiscent **Heteropyxis**
- 1b Ovary inferior, 2-locular; fruit fleshy **2**
- 2a Calyx tube sharply distinguished from pedicel, limb of calyx deeply 4(5)-lobed **Eugenia**
- 2b Calyx tube contracted gradually into pedicel **3**
- 3a Calyx tube obovate or club-shaped; limb of calyx entire or repandly lobed **Syzygium**
- 3b Calyx tube pyriform; calyx splitting irregularly at anthesis into 4 or 5 lobes **Psidium**

Eugenia L. (s. Afr.: 14 spp.) 5578000
Sonder. 1894. F.C. 2: 521–523.
Van Wyk. 1985. Contributions towards a new classification of *Eugenia* L. (Myrtaceae) in southern Africa. D.Sc. thesis, University of Pretoria.

albanensis Sond.
Subshrub, 400 mm tall. Leaves narrowly elliptic to elliptic or narrowly oblanceolate to lanceolate, (5–)10–20

mm wide. Bracteoles lanceolate, acute, sometimes foliaceous. Fruit large, up to 50 mm in diameter, edible. *Flowers white or pink.* Grassland in sandy soil. *Kluge 959.*

W S C N E

mossambicensis Engl.
Subshrub, 500 mm tall. Leaves elliptic or elliptic-oblong, apex acute or rounded, base cuneate. Young

branchlets with short erect hairs or glabrous. *Flowers white; November and February to March.* Grassland. Kruger 341.

W S C N E

natalitia Sond.

Tree or shrub, up to 4 m high. Leaves widely elliptic, elliptic or rarely narrowly elliptic or oblanceolate, margin entire or rarely weakly crenate. *Flowers white; October to February.* Riverbanks, misbelt forest. Codd & Dyer 4520.

W S C N E

pusilla N.E. Br.

Subshrub, 500 mm tall. Leaves linear-lanceolate or linear-elliptic, 2–3(–4) mm wide. Bracteoles filiform. *Flowers white tinged pink.* Grassland. Forbes sub PRE 6350.

W S C N E

woodii Dummer

Tree, up to 10 m high. Leaves broadly elliptic to elliptic, young leaves and shoots often densely tomentose, indumentum fairly persistent. *Flowers white tinged pink; November to December.* Forests. Hemm 22.

W S C N E

zuluensis Dummer

Tree or shrub, 3 m high. Leaves with midrib markedly elevated into a narrow median ridge on upper surface. *Flowers solitary in axils of leaves; white tinged pink.* Mist belt forest. Venter 1238.

W S C N E

Heteropyxis Harv. (s. Afr.: 3 spp.) 5588010

Fernandes. 1971. Mitt. bot. StSamml., Münch. 10: 207–234.
Fernandes. 1978. F.Z. 4: 212–215.

canescens Oliv.

(= *H. transvaalensis* Schinz)

Tree, up to 7 m high. Leaf lamina with very prominent lateral nerves below, forming a sharp angle with mid-vein, loose reticulation on the lower surface. Capsule subglobose, $\pm 3 \times 3$ mm, included or slightly exserted. *Flowers white or cream; December to January.* Shady mountain kloofs. Venter 9054.

W S C N E

dehniae Suess.

Tree, up to 20 m high. Leaf lamina with less prominent lateral nerves, dense reticulum on lower surface, young leaves and stems of inflorescence with long and $\pm$ erect hairs. Capsule ellipsoid, 3–4 $\times$ 2.0–2.5 mm, clearly exserted. *Flowers creamy white or yellowish; March.* Sides and summits of hills between granite or quartzite rocks, streambanks, galleries, savanna, bush clumps. Galpin 11409.

W S C N E

natalensis Harv.

Tree or shrub, up to 10 m high. Leaf lamina with less prominent lateral nerves, dense reticulum on lower surface, young leaves and stems of inflorescence with short and flattened hairs. Capsule globose or broadly ellipsoid, 2–3 $\times$ 1.5–2.0 mm, clearly exserted. *Flowers yellowish; December to March.* Sides and tops of hills, riverine forests, woodlands, thickets. Gerstner 5966.

W S C N E

Psidium L. (s. Afr.: 2 spp.)

5559000

Bailey. 1977. Hortus Third: 923.

guajava L.*

Small tree or shrub, up to 3 m high. Leaves opposite, veins prominent. Calyx tube prolonged above ovary, splitting irregularly at flowering time. *Flowers white; November to December.* Disturbed areas or abandoned land. Native to South America. Henderson 176.

W S C N E

Syzygium Gaertn. (s. Afr.: 6 spp.) 5583000

Sonder. 1894. F.C. 2: 521.

Burt Davy. 1926. Fl. Transv. 1: 240–241.

cordatum Hochst.

Tree or shrub, up to 10 m high. Branches tetragonous. Leaves opposite, elliptic-cordate. Fruit purple, becoming almost black when ripe. *Flowers white to cream; August to May.* Near water; mist belt forests. Retief & Herman 47.

W S C N E

gerrardii (Harv. ex Hook. f.) Burt Davy

Tree, 10 m high. Leaves distinctly petiolate, elliptic to oblong-elliptic, apex long-acuminate, midrib very prominent below. *Flowers white or cream; July, October and January to April.* Mist belt forests. Codd 5858.

W S C N E

guineense (Willd.) DC.

Tree, up to 10 m high. Leaves distinctly petiolate, obtusely apiculate, lanceolate-ovate to subelliptic, coarsely and prominently nerved. *Flowers white; September to January and in April.* Dry open woodland. Van der Schijff 3174.

W S C N E

legatii Burt Davy & Greenway

Tree, up to 8 m high. Leaves distinctly petiolate, elliptic to oblong-elliptic, apex obtuse, undersurface distinctly and very finely reticulate. *Flowers white; December to July.* Forested mountainsides and kloofs. Meeuse 9770.

W S C N E

NYCTAGINACEAE

Herbs, shrubs or trees, sometimes scandent. Leaves usually opposite, without stipules. Flowers regular, surrounded by green or coloured bracts often resembling a calyx. Calyx tubular, petal-like. True petals absent. Stamens usually 5, rarely up to 30. Ovary superior, 1-locular; style long and slender. Fruit a nut, often enclosed in persistent calyx tube.

Key after Dyer, Gen. 1: 74 (1975).

- 1a Bracts large connate; flowers conspicuous; branches soft and brittle **Mirabilis**
- 1b Bracts small, free 2
- 2a Shrub with spinescent branchlets; leaves linear, alternate and often fascicled; fruits winged **Phaeoptilum**
- 2b Herb, sometimes woody at base 3
- 3a Perianth funnel-shaped, slightly lobed; flowers relatively conspicuous; stamens well exerted **Commicarpus**
- 3b Perianth cylindrical, relatively small and inconspicuous; stamens $\pm$ exerted **Boerhavia**

Boerhavia L. (s. Afr.: 6 spp.)

2349000

Codd. 1966. Bothalia 9: 113–121.
Pohnert. 1969. F.S.W.A. 25: 2–4.
Stirton. 1983. Bothalia 14: 79–80.

diffusa L.*

(= *B. adscendens* Willd.)

Prostrate herb. Stems glabrous. Leaves broadly ovate, young leaves fringed with long septate hairs, otherwise glabrous. Inflorescence a lax, much-branched cyme. Fruit glandular. *Flowers deep purple; September to March.* Woodland. Native to South America. *Hardy & De Villiers 5156.*

W S C N E

erecta L.*

Semi-erect, soft herb, up to 350 mm tall. Stems puberulous. Leaves broadly ovate. Fruit eglandular, 5-ribbed, truncate at apex. *Flowers purple; October to January.* Woodland. Native to South America. *Nicholas 2167.*

W S C N E

repens L.

(= *B. diffusa* L. var. *minor* (Delile) Cufod.)

Prostrate herb. Leaves small, usually shorter than 25 mm. Inflorescences axillary clusters or short cymes up to 25 mm long. *Flowers pink; November.* Bushveld. *Zwanziger 481.*

W S C N E

Commicarpus Standl. (s. Afr.: 9 spp.) 2347010

Pohnert. 1969. F.S.W.A. 25: 4–6.
Stannard. 1988. F.Z. 9,1: 15–20.

fallacissimus (Heimerl) Heimerl ex Oberm., Schweick. & I. Verd.

(= *Boerhavia fallacissima* Heimerl)

Perennial herb, up to 350 mm tall. Perianth 6 mm or less. Perianth tube surrounding fruit ribbed, each rib ending in a gland. *Flowers white, pink or mauve; November to April.* Bushveld, grassland, stony kopies. *Kruger 311.*

W S C N E

pentandrus (Burch.) Heimerl

(= *Boerhavia pentandra* Burch.)

Perennial herb with trailing branches up to 500 mm tall. Upper portion of perianth 10–20 mm long. Stamens 5. Only 5 ribs of perianth tube surrounding fruit with stalked glands. *Flowers purple, pink or white; November to May.* Grassland and bushveld. *De Wet 41.*

W S C N E

pilosus (Heimerl) Meikle

(= *C. fallacissimus* (Heimerl) Heimerl forma *pilosus* Heimerl)

Herb, up to 0,7 m high. Stems minutely but distinctly glandular pubescent. Mature fruits clavate, tapering at both ends. Anthocarps with prominent but sessile glands scattered over surface. *Flowers pink, mauve or purple; November to May.* Savanna. *Wedermann & Oberdieck 1786.*

W S C N E

plumbagineus (Cav.) Standl.

(= *C. africanus* auct. non (Lour.) Dandy)

Shrublet with trailing branches. Upper portion of perianth 10–15 mm long. Perianth tube ribbed with sessile or shortly stalked glands. Stamens 3. *Flowers white to pale purple; July to June.* Bushveld, riverbanks. *Retief et al. 1141.*

W S C N E

Mirabilis L. (s. Afr.: 2 spp.)

2347000

Cook. 1910. F.C. 5: 393.

jalapa L.*

Erect, much-branched, perennial herb, up to 1,3 m high. Leaves ovate, petiolate. Perianth with tube $\pm$ 50 mm long, cylindrical below, funnel-shaped at top. *Flowers purple, red, yellow or white; January to April.* Garden weed. Native of South America. *J.B.G. 1588.*

W S C N E

Phaeoptilum Radlk. (s. Afr.: 1 sp.) 2351000

Pohnert. 1969. F.S.W.A. 25: 6–7.

spinosum Radlk.

Shrub, up to 4 m high. Branchlets spinescent. Leaves linear, fascicled. Fruits winged, papery, brownish red.

Flowers yellowish green; August to September. Woodland, riverbanks. Raal 856.

W S C N E

NYMPHAEACEAE

Aquatic herbs, with submerged rhizomes. Leaves floating, peltate. Flowers bisexual, solitary, floating. Sepals 4, adnate to base of disc. Petals many, passing into stamens, adnate to disc. Stamens many, free, with petaloid filaments and small anthers. Gynoecium of 8—many free or partly united carpels. Carpels sunk in fleshy disc, crowned by furrowed stigmas.

Nymphaea L. (s. Afr.: 4 spp.)

2513000

Mendonça. 1960. F.Z. 1: 175–180.

Verdcourt. 1989. F.T.E.A. Nymphaeaceae: 3–11.

midrib, margin entire. Flowers pale blue or pink; November to May. Streams, pools, dams. Theron 1718.

W S C N E

lotus L.

Aquatic herb. Leaves repand, dentate-mucronate by protrusion at margin of convergent prominent nerves. Flowers white; December to April. Dams, seasonal pans. Theron 2696.

W S C N E

nouchalii Burm. f. var. petersiana (Klotzsch) Verdc.

Aquatic herb. Leaves toothed to lobulate, with tertiary venation elegantly raised and reticulate beneath at least when dry. Flowers white; February. Seasonal ponds. Van der Schijff 353.

W S C N E

nouchalii Burm. f. var. caerulea (Sav.) Verdc.

(= *N. caerulea* Sav.,

= *N. calliantha* Conard)

Floating aquatic herb. Leaves orbicular to elliptic, green, red or purple beneath, primary nerves 5–8 on each side of

nouchalii Burm. f. var. zanzibariensis (Casp.) Verdc.

Aquatic herb. Leaves with sinuate-lobulate margin. Lobules rounded or obtuse. Stamens considerably more than 100. Flowers blue; December to August. Dams, pans. Retief 463.

W S C N E

OCHNACEAE

Trees, shrubs or dwarf shrubs. Leaves alternate, often with numerous side veins; stipules present, often united occurring between petiole and stem. Flowers regular. Petals 5, free. Stamens numerous, free. Ovary superior, deeply lobed into 5–15 free segments united by a common style. Fruit comprising several drupes corresponding to lobes of ovary; borne on enlarged and often red receptacle.

Key after Du Toit & Obermeyer in F.S.A. 22: 1 (1976).

- Leaf margin serrulate with mucronate teeth or ± entire; lateral veins not continuing upwards alongside margin; petals yellow or orange **Ochna**
 Leaf margin closely beset with small oblong-ovoid, white glands on shallow teeth; lateral veins continuing upwards alongside margin; petals white or pink **Brackenridgea**

Brackenridgea A. Gray (s. Afr.: 2 spp.)

5114000

Robson 1963. F.Z. 2: 252–254.

Ochna L. (s. Afr.: 12 spp.)

5112000

Du Toit & Obermeyer. 1976. F.S.A. 22: 1–12.

zanguebarica Oliv.

Small tree or shrub, (0,3–)2,0–10,0(–15,0) m high. Petals 4–5 mm long. Stamens 10(11). Flowers white to creamy white; October. Deciduous woodland. Van Wyk 5636.

W S C N E

arborea Burch. ex DC. var. arborea

(= *O. arborea* Burch. ex DC.)

Small shrub or tree, up to 12 m high. Leaves broadly elliptic, 40 × 15 mm, marginal teeth often obscure. Inflorescence few-flowered on short spurs. Carpels 5, reniform. Flowers yellow; August to December. Forest scrub and bushveld. Hafström & Acocks 1895.

W S C N E

arborea Burch. ex DC. var. *oconnorii* (E. Phillips) Du Toit
(= *O. oconnorii* E. Phillips)

Forest tree, up to 12 m high. Leaves narrowly elliptic-acuminate, 80 × 25 mm, margin distinctly serrate. Inflorescence many-flowered, paniculate. Carpels 5, reniform. *Flowers yellow; September to February.* Mist belt forests. *Scheepers 728.*

W S C N E

confusa Burt Davy & Greenway

Shrub, 0.5–1.0(–2.0) m high. Bark of woody stem base not properly developed on one side. Leaves long-attenuate basally, acute distally. Carpels 5, attached basally to receptacle. *Flowers bright yellow; September and October.* Rock crevices on hillsides in more open vegetation. *Renny 138.*

W S C N E

gamostigmata Du Toit

(= *O. atropurpurea* DC. var. *angustifolia* E. Phillips)

Small shrub or rarely a tree, up to 8 m high. Young twigs conspicuously and densely pale-mottled with lenticels. Leaves linear-acuminate. Flowers solitary. Sepals 10–15 mm long in fruit. *Flowers yellow; October and May.* In forested areas. *Codd & De Winter 3119.*

W S C N E

glauca L. Verd.

Small tree or spreading shrub, up to 3 m high. Leaves glaucous, drooping and folded. Flowers solitary. Sepals 10–15 mm long in fruit. *Flowers pale to bright yellow; September to October.* On granite hills. *Verdoorn 2292.*

W S C N E

holstii Engl.

Understorey tree or shrub, up to 8 m high. Leaves borne in a horizontal plane, appearing almost digitate on ends of branchlets, acute basally, attenuate-acuminate distally. Flowers in 6–10-flowered racemes. *Flowers pale to bright yellow; September and October.* Shady ravines in mist belt forests, gallery forests along rivers or as a forest relic in open areas. *Taylor 6078.*

W S C N E

inermis (Forssk.) Schweinf.

Spreading shrub, 1–2 m high. Flowers solitary, pedicels recurved, 20–30 mm long, articulated below centre

with upper part often forming an angle with lower part. Sepals 10–15 mm long in fruit. *Flowers yellow; September to December.* Arid regions, saxicolous or in sandy soil. *Pole Evans 4436.*

W S C N E

natalitia (Meisn.) Walp.

(= *O. atropurpurea* sensu Harv. var. *natalitia* (Meisn.) Harv., = *O. chilversii* E. Phillips)

Understorey forest tree or shrub, 0.5–2.0 m or up to 6 m high. Leaves shortly petiolate, leaf base obtuse. Flowers in many- to few-flowered racemes. Carpels 6–12, usually about 8. *Flowers yellow; August to December.* In forest, in sandy soil or amongst rocks. *Breyer 17701.*

W S C N E

pretoriensis E. Phillips

Shrub or rarely tree, up to 1.5(–2.0) m high. Young twigs with some scattered lenticels. Leaves narrowly obovate, margin indistinctly to distinctly serrulate. Flowers solitary, pedicels erect or spreading, 10–15 mm long. *Flowers yellow; September and October.* Saxicolous, common on northern hillsides around Pretoria. *Turner 46.*

W S C N E

pulchra Hook.

(= *O. rehmannii* Szyszyl.)

Shrub or tree, up to 10 m high. Bark flaking to expose patches of a different colour. Flowers in simple, pendulous, clustered, many-flowered racemes. Carpels 6–8, attached centrally on inside of torus; drupelets kidney-shaped. *Flowers soft yellow; August to November.* Rocky sandstone slopes or sandy areas. *Galpin 11633.*

W S C N E

serrulata (Hochst.) Walp.

(= *O. atropurpurea* sensu Harv. non DC.)

Shrub or rarely a small tree, 0.6–2.0 m high. Leaves small, 25–50 mm long. Flowers solitary or rarely binate, pedicels articulated 1–2 mm above base. Sepals 10–15 mm long. Carpels 5. *Flowers yellow; August.* Along forest edges or beside paths, in scrub forest. *Crundall PRE 32796.*

W S C N E

OLACACEAE

Trees, shrubs, sometimes scandent. Leaves alternate. Flowers regular, with conspicuous disc. Calyx small. Petals 3–5, free or united. Stamens twice as many as and opposite petals. Ovary superior or slightly sunken into disc; stigma with 2–5 lobes. Fruit often a drupe.

Key after Dyer, Gen. 1: 53 (1975).

Calyx saucer-like, truncate, enlarged in fruit; branchlets not spinescent; petals glabrous within *Olax*
 Calyx 4- or 5-toothed or -lobed; not enlarged in fruit; shrubs or trees with aborted, spinescent branchlets; petals bearded within *Ximenia*

***Olax* L. (s. Afr.: 1 sp.)**

2131000

García. 1963. F.Z. 2: 332.

***dissitiflora* Oliv.**

Shrub or small tree, up to 12 m high. Leaves lanceolate, 50 × 20 mm, borne singly and alternately but close together and only near ends of branches, petioles slender, 3–8 mm long. Fruit a small (± 8 mm long) drupe, red when ripe with clearly discernible ring around apex. *Flowers white; October to November.* Woodland, sandy soil. *Van Wyk 3004.*

W S C N E

***Ximenia* L. (s. Afr.: 3 spp.)**

2136000

García. 1963. F.Z. 2: 329–331.

***americana* L. sens. lat.**

Spiny shrub or small tree, up to 5 m high. Leaves 20–80 × 10–40 mm, glaucous. Flowers in pedunculate cymes. Fruit orange, ± 25 mm in diameter, drupaceous, ellip-

soid or subglobose. *Flowers white; September to November.* Dry woodland and grassland. *Herman et al. 673.*

W S C N E

caffra* Sond. var. *caffra

Shrub or small tree, up to 6 m high. Young branches and leaves tomentose. Flowers fasciculate or solitary. Perianth green. Anthers brown. Fruit orange, drupaceous, 25 × 18 mm. *Flowers white, greenish white or greenish yellow; September to November.* Woodland, grassland, sandy slopes. *Hanekom 1888.*

W S C N E

***caffra* Sond. var. *natalensis* Sond.**

Shrub or small tree, up to 6 m tall. Young branches and leaves glabrous. Flowers fasciculate or solitary. Perianth green. Anthers brown. Fruit orange, drupaceous, 25 × 18 mm. *Flowers greenish; August to November.* Woodland, grassland, sandy soil. *Buitendag 882.*

W S C N E

OLEACEAE

Trees, shrubs, climbers or rarely herbaceous shrublets. Leaves opposite, without stipules. Flowers regular. Petals 4, 5 or more, united; anthers ending in sharp points, with pollen chambers back-to-back. Stamens 2, arising from petals. Ovary superior. Fruit a drupe, berry or capsule.

Key partly after Verdoorn in F.S.A. 26: 100 (1963).

- 1a Fruit a woody capsule; corolla salver-shaped, tube well developed, lobes spreading, with a group of swollen brown to purplish hairs at base of lobes *Schrebera*
- 1b Fruit a drupe, berry or membranous capsule, never a woody capsule; corolla lobes without a group of swollen brown to purplish hairs at their base 2
- 2a Fruit a membranous capsule; low virgate shrublet or herbaceous plant with woody base; corolla yellow *Menodora*
- 2b Fruit a drupe or berry; trees, shrubs or climbers 3
- 3a Corolla tube long and slender; lobes narrow; fruit a berry, 2-lobed, 1 usually aborting; climbers or bushy shrubs *Jasminum*
- 3b Corolla tube short to almost none 4
- 4a Leaves on flowering branches usually with acarodomatia; calyx deeply lobed; corolla tube very short, usually slit to base between alternate lobes, lobes usually appearing distinctly longer than broad because of deeply infolded margins; apex cucullate; inflorescence axillary, often on old wood, few-flowered; ovules attached ventrally; seeds exalbuminous, cotyledons thick *Chionanthus*
- 4b Leaves without acarodomatia; calyx toothed or shallowly lobed; corolla tube short but distinct, lobes only slightly longer than broad; inflorescence terminal or axillary, very many-flowered; ovules pendulous, seed albuminous 5
- 5a Anthers small, included or exserted; filaments short or long; fruit a berry *Ligustrum*
- 5b Anthers large, filaments short; fruit a drupe *Olea*

***Chionanthus* L. (s. Afr.: 3 spp.)**

6428000

Verdoorn. 1963. F.S.A. 26: 119–124.

Stearn. 1980. J. Linn. Soc., Bot. 80: 197–204.

***battiscombei* (Hutch.) Stearn**

(= *Linociera battiscombei* Hutch.,
= *Dekindtia africana* Gilg)

Tree, 4–5 m high. Inflorescence a reduced cyme with flowers subsessile and appearing glomerate in leaf axils. Young inflorescence a densely pubescent sessile

globule. Calyx segments up to 4,5 mm long. *Flowers white; October and April.* Wooded mountain ravines on banks of streams. *Codd 8737a.*

W S C N E

foveolatus (E. Mey.) Stearn subsp. **foveolatus**

(= *Linociera foveolata* (E. Mey.) Knobl.,
= *Olea foveolata* E. Mey.)

Small tree, up to 10 m high. Ultimate twigs glabrous. Leaves on flowering branches rarely longer than 70 mm, usually more than twice as long as broad. Inflorescence a few- to several-flowered axillary cymose panicle. Fruit up to 20 mm long. *Flowers white, sometimes tinted pink; October to May.* In bush on hillsides, scrub forest, kloofs, gorges or rocky places in natural forest. *Schlieben 11920/19* (flowers), *Marais 286* (fruit).

W S C N E

foveolatus (E. Mey.) Stearn subsp. **major** (I. Verd.)

Stearn
(= *Linociera foveolata* (E. Mey.) Knobl. subsp. *major* I. Verd.)

Forest tree, up to 30 m high. Inflorescence, leaves and twigs as in subsp. *foveolatus*, but leaves usually not more than twice as long as broad. Fruits up to 27 × 20 mm. *Flowers white, sometimes tinted pink; October and January to May.* High altitude forests. *Story 5440.*

W S C N E

Jasminum L. (s. Afr.: 10 spp.)

6440000

Verdoorn. 1963. F.S.A. 26: 103–112.

abyssinicum Hochst. ex DC.

Shrub, climber. Leaves compound, 3-foliolate, leaflets longer than 50 mm, acarodomatia in axis of central and upper veins. Inflorescence of broad lax cymes, terminal and axillary. Calyx longer than 2 mm. *Flowers white, suffused reddish purple without; March to May.* High forest. *Meeuse 9941.*

W S C N E

angulare Vahl

Shrub, climber or scrambler. Leaves compound, 3-foliolate, sometimes some pinnately 5-foliolate, petioles suberect. Inflorescence fairly compact. *Flowers white, greenish outside; January and May.* Among boulders on hillsides, near rivers, in scrub and scrub forest. *Jenkins 9300.*

W S C N E

breviflorum Harv. ex C.H. Wright

Climber. Leaves unifoliolate; acarodomatia, if present, in axils of basal or lower veins; petioles articulate in upper portion. Calyx lobes much shorter than calyx tube, very shallow or up to 1,5 mm long, then thickened and conduplicate, apiculate. *Flowers white; October to March.* In semishade in dry scrub and open woodland. *Codd 4793.*

W S C N E

fluminense Vell.

Woody climber or scrambler. Leaves compound, 3-foliolate, leaflets under 50 mm long; acarodomatia, if present, in axils of lower veins only. Inflorescence of broad lax cymes, terminal and axillary only in upper leaves. Calyx small, under 2 mm long. *Flowers white; July to June.* Along rivers or in watercourses in dry country. *Codd 5655.*

W S C N E

multipartitum Hochst.

Shrub, 0,45–3,00 m high. Twigs shortly, densely and persistently puberulous. Leaves unifoliolate, rarely 3 times as long as broad, petiole articulate in lower half. Calyx lobes almost as long as to much longer than calyx tube. *Flowers single on short pedicels, white, pink-flushed or lobes dorsally brick-red; September to January.* Dry regions on rocky slopes and boulder-strewn koppies, in woods or scrub bush. *Leach 11537.*

W S C N E

quinatum Schinz

(= *J. tortuosum* sensu Harv. ex C.H. Wright)

Straggling subshrub, 450 mm tall. Leaves usually digitately 5–7-foliolate, sometimes 3-foliolate, leaflets more than twice as long as broad. *Flowers white; October to January.* Mountainsides, among rocks on hillsides, along sandy streambanks or on shaly slopes in open woodland. *Codd & Verdoorn 7599.*

W S C N E

stenolobum Rolfe

Bushy or straggling shrub, sometimes climber or scrambler. Twigs tomentulose. Leaves unifoliolate, without acarodomatia, petioles articulate in lower half. Pedicels short and thick, about 5–7 mm long, densely pubescent. Calyx lobes up to 13, subulate, longer than calyx tube. *Flowers white; September to January.* Dry subtropical bush, often associated with rocks. *Codd & Verdoorn 7611.*

W S C N E

streptopus E. Mey. var. **transvaalensis** (S. Moore) I.

Verd.

Shrub, climber or scrambler. Leaves unifoliolate, ovate-acuminate, with acarodomatia, petioles short, articulate near apex. Pedicels long and slender, sparsely pilose or glabrous. Calyx lobes as long as to much longer than calyx tube. *Flowers white; October to January.* Scrambler on undergrowth in bush groups, along rivers, at edge of forest or on wooded ledges. *Codd & Dyer 9128.*

W S C N E

Ligustrum L. (s. Afr.: 3 spp.)

6436000

Do Amaral Franco. 1972. Fl. Europ. 3: 54.

Kruger. 1973. Bome, struik en rankplante: 314–316.

japonicum Thunb.*

Shrub or small tree, 4.5–6.0 m high. Leaves 35–100 mm long, ovate, acuminate, glossy dark green. Flowers in terminal panicles. *Flowers white; October to February*. Spreading along roadsides and watercourses. Native to Japan. *Duggan & Henderson 57*.

W S C N E

sinense Lour.*

Shrub or small tree, 3.5–6.0 m high. Young branches tomentellous. Leaves oval, 25–70 mm long, hairy on midvein. *Flowers in loose, upright panicles; white; October to April*. Spreading along watercourses. Native to China. *Henderson 531*.

W S C N E

Menodora Humb. & Bonpl. (s. Afr.:

3 spp.)

6438000

Verdoorn. 1963. F.S.A. 26: 125–128.

africana Hook.

Undershrub, 50–250 mm tall. Leaves bipinnatisect, segments subulate. Calyx lobes multipartite. *Flowers red in bud; yellow tinged reddish when open; August to April*. Grassland, often on rocky sides of small depressions. *Verdoorn PRE 28544*.

W S C N E

heterophylla Moric. ex DC. var. **australis** Steyerl.

Undershrub, 70–250 mm tall. Leaves mostly 3- to 5-lobed, segments 1.5–2.5 mm broad. Calyx lobes usually undivided. *Flowers yellow; April to January*. Sand flats in woodland or sour bushveld. *Sutton 1113*.

W S C N E

Olea L. (s. Afr.: 4 spp.)

6434000

Verdoorn. 1963. F.S.A. 26: 112–119.
Green. 1979. Kew Bull. 34: 69.

capensis L. subsp. **enervis** (Harv. ex C.H. Wright) I. Verd.(= *O. enervis* Harv. ex C.H. Wright)

Tree or shrub, 2–12 m high. Leaves broadly elliptic, midrib prominent only in lower half beneath, disappearing in upper half. Inflorescence terminal and axillary only in 2 upper pairs of leaves. Fruit subglobose to oblong-elliptic, up to 10 mm long. *Flowers white;*

October to April. Dry bushveld. *Van der Schijff 5363* (flowers), *Codd & Dyer 9227* (fruit).

W S C N E

capensis L. subsp. **macrocarpa** (C.H. Wright) I. Verd.(= *O. macrocarpa* C.H. Wright)

Forest tree, up to 30 m high. Leaves elliptic, tapering to base and apex. Petiole usually long and spreading. Inflorescence as in subsp. *enervis*. Fruit large, oblong-elliptic, about 15 mm long. *Flowers creamy white; November to January and in April*. Forest. *Scheepers 1104*.

W S C N E

europaea L. subsp. **africana** (Mill.) P.S. Green

(= *O. africana* Mill.,
= *O. verrucosa* Link)

Tree, 3–14 m high. Leaves usually densely covered with small scales below, linear-lanceolate to narrowly oblong-elliptic. Inflorescence axillary as well as terminal. *Flowers white; October to February*. From forest and riverside bush to open grassland, flats, stony ground, mountain kloofs and rocky ledges. *Theron 3500*.

W S C N E

woodiana Knobl.

Tree, 4–17 m, rarely 30 m high. Leaves fairly sparsely and very minutely scaly below appearing minutely pitted, lanceolate-elliptic to elliptic, usually broadest about the middle and from there tapering to base and apex. Inflorescence axillary as well as terminal. *Flowers white; January*. High forest and woods. *Van der Schijff 5029*.

W S C N E

Schrebera Roxb. (s. Afr.: 2 spp.)

6422000

Verdoorn. 1963. F.S.A. 26: 100–103.
Kupicha. 1983. F.Z. 7,1: 301–305.

alata (Hochst.) Welw.(= *S. argyrotricha* Gilg)

Tree, 4–15 m high. Leaves imparipinnate, 5(7)-foliolate. Inflorescence several- to many-flowered, with pedicels up to 2 mm long. Fruit clavate, containing 8 winged seeds. *Flowers white suffused with pink; September to May*. Margins of forest or bushveld. *De Winter 7814* (flowers), *Codd 6053* (fruit).

W S C N E

OLINIACEAE

Trees or shrubs. Branches 4-angled. Leaves opposite, stipules absent. Flowers regular. Calyx truncate or obscurely 4- or 5-lobed. Petals (4 or) 5, free, inserted in throat of calyx tube. Stamens 4 (or) 5, inserted in calyx tube. Ovary inferior, 3–5-locular. Fruit a dry, globose, false drupe.

Olinia Thunb. (s. Afr.: 4 spp.)

5428000

Codd. 1957–58. Flower. Pl. Afr. 32: t. 1260.

Verdcourt. 1975. F.T.E.A. Oliniaceae: 1–4.

Coates Palgrave. 1977. Trees of southern Africa: 643–645.

emarginata Burt Davy

Small tree or shrub, 2–12 m high. Young branches angular. Leaves opposite, glossy dark green above, paler green and dull below, lateral vein loops forming a continuous line within margin on lower surface, apex emarginate. Petals 3.0–3.5 mm long. *Flowers pink; November to January*. In mountain ravines, forest patches and wooded streambanks. *Codd 9381*.

W S C N E

rochetiana Juss.(= *O. usambarensis* Gilg)

Small or large tree or shrub, (1.2–)4.0–16.0 m (occasionally up to 27 m) high. Leaves opposite, net-veining conspicuous below. Petals 2.3–5.0 mm long. *Flowers yellowish cream, white, pink or crimson; often white at first, later becoming red; October to January*. Upland dry and moist evergreen forest, forest edges. *Van der Schijff 5835*.

W S C N E

ONAGRACEAE

Herbs, rarely shrubs or trees. Leaves alternate or opposite, without stipules. Flowers regular. Petals 4, free. Stamens 8, free. Ovary inferior, 4-locular; style 4-lobed. Fruit a capsule.

Key after Goldblatt & Raven in unpublished F.S.A. manuscript.

- 1a Floral tube 0; sepals persistent in fruit after petals have fallen; petals lacking, or if present yellow **Ludwigia**
- 1b Floral tube present; sepals not persistent in fruit, falling with floral tube; petals yellow, rose-purple or white 2
- 2a Petals narrow, white, flower zygomorphic; fruit nut-like, indehiscent, with 2–8 ovules **Gaura**
- 2b Petals broader, yellow, rose-purple or white, flower actinomorphic; fruit a dehiscent capsule, with many ovules 3
- 3a Seeds with an evident tuft of hairs, the coma; petals rose-purple or white; capsule slender, elongate; basal leaves opposite ... **Epilobium**
- 3b Seeds lacking a coma; petals yellow, rose-purple or white; capsule clavate or elongate, thicker; all leaves alternate **Oenothera**

Epilobium L. (s. Afr.: 4 spp.)

5795000

Sonder. 1894. F.C. 2: 507.

Compton. 1967. Jl S. Afr. Bot. 33.4: 297.

Raven. 1967. Bothalia 9: 309–333.

Raven. 1978. F.Z. 4: 343–346.

Goldblatt & Raven. Unpublished F.S.A. manuscript.

capense Buchinger ex Hochst.(= *E. flavescens* E. Mey. ex Harv.)

Perennial herb, 0.1–1.2 m high. Stems clothed with appressed pubescence. Leaves petiolate, usually rounded to obtuse at base. Stigma deeply 4-cleft. *Flowers bright rose-purple, paler purplish, creamy or white; November to April*. Moist places. *Devenish 859*.

W S C N E

hirsutum L.

Robust herb, 0.2–2.5 m high. Stems clothed with spreading pubescence. Leaves subsessile, distinctly clasping at base. Stigma deeply 4-cleft. *Flowers bright purplish rose; October to May*. Wet places in swamps and marshes and beside rivers and lakes. *Liebenberg 2870*.

W S C N E

salignum Hausskn.(= *E. neriophyllum* Hausskn.)

Perennial herb, 0.2–1.6 m high. Stems glabrous. Leaves petiolate, narrowly cuneate to attenuate at base. Stigma

entire. *Flowers white or cream at first, then rose-pink after pollination; December to May*. Moist places. *Scheepers 625*.

W S C N E

tetragonum L. subsp. tetragonum

Perennial herb, 0.1–1.0 m high. Pubescence entirely strigose or with a copious admixture of glandular trichomes. Leaves narrow, subsessile and strongly decurrent, evenly and strongly denticulate. Stigma entire. *Flowers pale lilac to rich rose-purple; November and March*. Moist places. *Young A109*.

W S C N E

Gaura L. (s. Afr.: 2 spp.)

5819000

Munz. 1965. N. Am. Fl., Ser. 2.5: 182–196.

lindheimeri Engelm. & A. Gray*

Perennial herb, 0.5–0.9 m high. Capsule sessile or nearly so, sharply angled. Sepals 12–15 mm long. Petals 12–20 mm long. Filaments 10–15 mm long. *Flowers white changing to rose; November*. Disturbed places. Native to North America. *Codd sub PRE 29782*.

W S C N E

Ludwigia L. (s. Afr.: 7 spp.)

5793000

Torrey & Gray. 1840. N. Am. Fl. 1: 525.
Raven. 1978. F.Z. 4: 333–343.

adscendens (L.) Hara subsp. **diffusa** (Forssk.) P.H. Raven
(= *L. stolonifera* (Guill. & Perr.) P.H. Raven,
= *Jussiaea diffusa* Forssk.)

Prostrate or ascending herb. Stamens twice as many as sepals. Seeds firmly embedded in woody coherent endocarp, uniseriate, pendulous, appearing as bumps in capsule wall. *Flowers lemon-yellow with darker spot at base; July to June.* Wet places, especially along rivers and lakes where they often grow floating on water. *Van der Schijff 355.*

W	S	C	N	E
---	---	---	---	---

octovalvis (Jacq.) P.H. Raven

(= *Jussiaea angustifolia* Lam.,
= *J. suffruticosa* L.,
= *L. octovalvis* (Jacq.) P.H. Raven subsp. *brevispala* (Brenan)
P.H. Raven,
= *L. octovalvis* (Jacq.) P.H. Raven subsp. *sessiliflora* (Micheli)
P.H. Raven)

Robust well-branched herb or shrub, up to 4 m high, subglabrous or with sparse or dense appressed pubescence. Leaves lanceolate or narrowly lanceolate to narrowly ovate. Stamens twice as many as sepals. Seeds free, not embedded in endocarp, pluriseriate. *Flowers yellow; November to May.* Moist places often near cultivated fields. *Codd 5355.*

W	S	C	N	E
---	---	---	---	---

palustris (L.) Elliot

Creeping herb, entirely glabrous. Leaves opposite. Stamens as many as sepals, petals absent. *Flowering November to February and in May to June.* Along margins of lakes, along streams and in wet places. *Theron 1751.*

W	S	C	N	E
---	---	---	---	---

Oenothera L. (s. Afr.: 14 spp.)

5804000

Munz. 1965. N. Am. Fl., Ser. 2,5: 79–177.
Dietrich. 1977. Ann. Mo. bot. Gdn. 64: 425–626.
Raven. 1978. F.Z. 4: 330–332.

affinis Cambess.*

Erect annual herb, 0.4–1.5 m high, entirely covered with soft hairs. Leaves narrowly elliptic. Capsule cylindrical, 30–40 mm long. *Flowers up to 70 mm in diameter; floral tube 80–110(–130) mm long; petals 20–40 mm long; yellow; October.* Disturbed places. Native to South America. *Barnard 578.*

W	S	C	N	E
---	---	---	---	---

biennis L.*

Weedy biennial herb, 0.3–2.0 m high. Leaves strongly dentate, venation conspicuous. Capsule cylindrical. Calyx tube 25 mm long. *Flowers not more than 40 mm in diameter; yellow, not fading red; January to March.* Disturbed and waste places. Native to North America. *Burt Davy 9311.*

W	S	C	N	E
---	---	---	---	---

drummondii Hook.*

Perennial herb, 0.2–0.6 m high, densely canescent-villous. Cauline leaves mostly oblong-ovate to oblong-ovate. Hypanthium 20–40 mm long. Petals and sepals 20–30 mm long. Capsule cylindrical; seeds fusiform. *Flowers yellow, fading reddish; November.* Disturbed places. Native to North America. *Duncan sub PRE 29487.*

W	S	C	N	E
---	---	---	---	---

glazioviana Micheli*

(= *O. erythrosepala* Borbás)

Biennial or short-lived perennial herb, 0.8–1.2 m high. Stems conspicuously muricate with red bulbous bases to the longer hairs. Leaves strongly crinkled. Petals 30–60 mm long. Sepals 20–60 mm long. Capsule cylindrical. *Flowers golden yellow, fading red-orange; November to April.* Disturbed places. Probably native to Europe. *Hofmeyer 128.*

W	S	C	N	E
---	---	---	---	---

indecora Cambess. subsp. **bonariensis** W. Dietr.*

Villous, glandular-pubescent annual herb, 0.2–0.6 m high. Leaves entire to dentate, margins undulate. Flowers less than 20 mm in diameter. Petals 4–10 mm long. Sepals often flecked with dark red. Capsule cylindrical. *Flowers yellow or bright yellow; October to December and in April.* Disturbed places. Native to South America. *Hanekom 1663.*

W	S	C	N	E
---	---	---	---	---

jamesii Torr. & Gray*

Annual or biennial herb, up to 1.5 m high. Stems and fruit adpressed pubescent. Cauline leaves 20–35 mm broad, sharply sinuate-serrulate. Sepals and petals 20–60 mm long. Capsule cylindrical. *Flowers up to 100 mm in diameter; bright yellow fading pinkish; July to August and November to April.* Weed on moist soils or roadsides. Native to North America. *Liebenberg 110.*

W	S	C	N	E
---	---	---	---	---

laciniata Hill*

Annual herb, up to 300 mm tall. Leaves sinuate-dentate or sinuate-pinnatifid, or rarely subentire. Sepals 6–8 mm long. Petals 5–7 mm long. Capsule cylindrical; seeds coarsely and conspicuously pitted. *Flowers bright yellow, fading reddish; October to November and in February.* Disturbed places near water. Native to North America. *Herman 716.*

W	S	C	N	E
---	---	---	---	---

parodiana Munz subsp. **parodiana***

Erect or somewhat decumbent annual or biennial herb, 0.3–0.7 m high. Pubescence villous and glandular-pubescent, often also strigulose. Petals 7–12 mm long, floral tube 10–20 mm long. Capsule cylindrical. *Flowers light yellow, sometimes with red basal spot; September to February.* Disturbed places. Native to South America. *Louw 1740.*

W	S	C	N	E
---	---	---	---	---

rosea L'Hér. ex Aiton*

Perennial herb, 200–500 mm tall, mostly strigulose. Capsule clavate. *Flowers opening near sunrise; less than 20 mm in diameter; bright purplish rose; September to April.* In gardens and waste places. Native to South America. *Van Hoepen 1746.*

W S C N E

stricta Ledeb. ex Link subsp. *stricta**

(= *O. nocturna* sensu Harv.)

Perennial herb, 0.3–1.0 m high, branched from base with a conspicuous rosette of leaves. Leaves narrowly lanceolate to oblong, with prominent pale yellow midribs. Sepals 15–22 mm long. Petals 20–32 mm long. Capsule cylindrical. *Flowers more than 20 mm in diameter; bright yellow, fading reddish; March to December.* Disturbed places. Native to South America. *Repton 650.*

W S C N E

tetraptera Cav.*

Hirsute perennial herb, 150–400 mm tall. Capsule clavate. *Flowers opening near sunset; up to 60 mm in diameter; white, fading purplish; September to April.* Roadsides and waste places. Native to South America. *Hanekom 1502.*

W S C N E

villosa Thunb. subsp. *villosa**

Erect, rosette-forming biennial herb, 0.5–2.0 m high. Floral tube 20–33 mm long, petals 8–17 mm long. Capsule cylindrical; seeds prismatic. *Flowers yellow; January.* Disturbed places. Native to North America. *Strey sub PRE 29484.*

W S C N E

OROBANCHACEAE

Parasitic herbs. Stems simple or branched, fleshy, usually covered with scale-like leaves and gland-tipped, papillose hairs. Flowers bisexual, solitary in axils of upper leaves, usually bracteate. Calyx with 2–5 lobes or teeth. Corolla bilabiate, with tube usually $\pm$ funnel-shaped. Stamens 4; filaments usually thickened. Ovary superior, 1-locular. Fruit a capsule.

Orobanche L. (s. Afr.: 2 spp.) 7791000

Henderson & Anderson. 1966. Common weeds in South Africa: 302–303. Visser. 1981. Veld & Flora 67, 1: 14–17.

ramosa L.*

Branched herb, up to 200 mm tall, parasite. Branches purplish, viscid-pubescent. Leaves reduced to ovate-

acuminate purplish brown bracts. Flowers in dense terminal spikes, each flower subtended by a bract and 2 small, linear bracteoles. *Flowers bright blue; April.* Parasite on tobacco plants. Native to Europe and Asia. *Melle PRE 43104.*

W S C N E

OXALIDACEAE

Herbs. Leaves in a basal rosette, palmately compound, without stipules. Flowers regular. Petals 5, free, twisted in bud. Stamens 10: 5 long and 5 short, united at base. Ovary superior, 5-locular, with 5 free styles. Fruit a capsule.

Oxalis L. (s. Afr.: 195 spp.) 3936000

Salter. 1944. JI S. Afr. Bot., Suppl. 1.

corniculata L.*

(= *O. repens* Thunb.)

Creeping, much-branched annual herb, up to 200 mm tall. Root fibrous, without a bulb. Flowers homomorphous. *Flowers yellow; September to April.* Sandy soil in shade of grasses, well drained. Native to Europe and Asia. *Ellery 281.*

W S C N E

davyana R. Knuth

(= *O. galpinii* Burt Davy)

Rosulate herb, up to 400 mm tall, rare. Leaves large, lobes ovate to oblong, large, dark green, petioles long. *Flowers pink; January.* In forest and along streams. *De Villiers 119.*

W S C N E

depressa Eckl. & Zeyh.

(= *O. inops* Eckl. & Zeyh.,
= *O. dammeriana* Schltr.)

Stemless herb, up to 120 mm tall. Bulb ovoid. Leaves ecallose or with very few small black calli. Sepals usually with 2 (rarely more) apical calli, obtuse. Tube half the length of corolla. *Flowers white, rosy or violaceous with yellow tube; October to April.* Grassland, sandy soils, moist places or near water. *Theron 2053.*

W S C N E

latifolia Humb., Bonpl. & Kunth*

Herb, up to 250 mm tall. Bulbs giving rise to numerous runners which develop their own bulbils. Leaves borne on long slender petioles arising from scaly brown bulbils, leaflets broadly obdeltoid, notched on apical margin. *Flowers violet with greenish tube; December*

to May. Granite outcrops, disturbed areas, in moist and shady places. Native to South America. *Smith 1828.*

W S C N E

obliquifolia Steud. ex Rich.

Herb, up to 200 mm tall. Bulb ovoid, not angled or winged. Leaflets as broad as or broader than long. Sepals acute, pilose, without calli. Style and longest stamens not exerted. Ovary ecallose. *Flowers rosy or rosy-violaceous, rarely white, with yellow tube; November to March.* Grassland, sandy soil. *Devenish 346.*

W S C N E

purpurea L.

(= *O. variabilis* Jacq.)

Herb, up to 150 mm tall. Leaflets and sepals with faint pellucid streaks which turn dark in drying. Corolla tube narrowly cyathiform. Bracts low down on peduncle. *Flowers rose-purple, deep rose, pale violet, salmon,*

yellow, cream or white, tube yellow; September to May. Grassland, moist sandy soil, near water. *Taylor 4783.*

W S C N E

semiloba Sond.

Herb, up to 400 mm tall. Bulb with contractile root, bulb tunics smooth. Rhizome without runners. Sepals with rusty apical calli. Peduncles basal. *Flowers purplish pink with yellow tube; December to March.* Grassland, wet and sandy soil, shady places. *Van Vuuren 1674.*

W S C N E

smithiana Eckl. & Zeyh.

(= *O. galpinii* Schltr.,
= *O. gracilicaulis* Eckl. & Zeyh.)

Stemless herb, up to 200 mm tall. Bulb not acutely angled or pitted. Leaves basal, compound with 3 leaflets, leaflets bifurcate to middle or below. Peduncle 1-flowered. *Flowers pale lilac or white, tube greenish; August to April.* Grassland, on dolomite outcrops. *Pott sub TRV 14970.*

W S C N E

PAPAVERACEAE

Herbs, often with milky or yellow latex. Leaves alternate, sometimes prickly, without stipules. Flowers regular, mostly solitary and showy. Sepals 2 or 3, often falling quickly. Petals 4–6, free, crumpled in bud. Stamens numerous, free. Ovary superior; style absent; stigma disc-shaped. Fruit a capsule, opening by pores or slits.

Key after Dyer, Gen 1: 166 (1975).

Flower buds erect; capsule opening by slits **Argemone**
Flower buds drooping; capsule opening by pores beneath stigmas **Papaver**

Argemone L. (s. Afr.: 3 spp.) 2852000

Friedrich-Holzhammer. 1968. F.S.W.A. 46 & 47: 1–2.
Exell & Gonçalves. 1973. Fl. Mozamb. 9: 1–3.

Flowers pale yellow to white; August to May. Cultivated land. Native to Mexico. *Henderson 293.*

W S C N E

mexicana L.*

Annual herb, up to 0.9 m high. Leaves thin-textured, green. Capsule elliptic, spiny. *Flowers yellow; November to January.* Disturbed places. Native to South America. *Onderstall 745.*

W S C N E

ochroleuca Sweet subsp. **ochroleuca***

(= *A. subfusiformis* G.B. Ownbey)

Robust annual herb, up to 0.9 m high, pioneer plant. Leaves glaucous, thick-textured, often with bluish marks. Capsule oblong with many stout spines.

Papaver L. (s. Afr.: 3 spp.) 2853000

Mowat. 1964. Fl. Europ. 1: 249.
Henderson & Anderson. 1966. Common weeds in South Africa: 146–147.

aculeatum Thunb.

(= *P. gariepinum* Burch.)

Erect annual herb, up to 0.9 m high. Leaves shallowly to deeply pinnately lobed, dentations with apical yellowish spines, midrib and veins densely spiny beneath. Fruit a capsule, opening by pores. *Flowers salmon-pink or orange-red; November to January.* Old cultivated lands and waste places. *Van Wyk 1783.*

W S C N E

PASSIFLORACEAE

Herbs, shrublets or climbers with axillary tendrils. Leaves alternate, usually palmately lobed, often with glands on petiole and blade, with stipules. Flowers regular, with a receptacle tube (hypanthium). Petals 5, free. Corona often present, comprising thread-like processes or scales. Stamens 5–many. Ovary superior, 1-locular, stalked; stigmas 3–5, free. Fruit berry-like or a capsule.

Key after De Wilde in F.S.A. 22: 104–105 (1976).

- 1a Shrubs or trees, without tendrils; vegetative ramification through axillary bud; corona tomentose, composed of threads arranged in 5 bundles **Paropsia**
- 1b Mostly tendril climbers, rarely low herbs without tendrils, or shrub-like, sometimes provided with thorns; vegetative ramification through accessory bud 2
- 2a Flowers (mostly) unisexual; corona ill-developed, or absent; disc consisting of 5 strap-shaped parts, or absent; stigmas divided or distinctly papillate **Adenia**
- 2b Flowers hermaphrodite; corona well-developed; disc annular or absent; stigmas capitate or subglobose 3
- 3a Flowers small, up to 15 mm in diameter; androgynophore absent, stamens inserted inside in inner corona **Basananthe**
- 3b Flowers usually much larger; androgynophore distinct **Passiflora**

Adenia Forssk. (s. Afr.: 10 spp.) 5370000

De Wilde. 1976. F.S.A. 22: 106–117.

digitata (Harv.) Engl.

(= *Modecca digitata* Harv.)

Herbaceous climber, 0.2–3.0 m high. Glands at leaf base 2, at transition of petiole to blade. Leaves palmately (3–)5-parted or -foliolate. *Flowers white, green, yellow or cream; October to April and in July.* Savanna, rocky and grassy places, on termite mounds, forest fringes, etc. *Codd 2236.*

W S C N E

fruticosa Burt Davy subsp. fruticosa

Shrub or shrubby tree, up to 6 m high. Gland at leaf base 1. Leaves 3–5-foliolate, petiolule of leaflets 2–5(–7) mm. Anthers 3 mm. *Flowers greenish; September.* In bushveld, on dry stony slopes, dry sandy loam soil and granite. *Fourie 2830.*

W S C N E

fruticosa Burt Davy subsp. simplicifolia W.J. de Wilde

Shrub or shrubby tree, up to 6 m high. Gland at leaf base 1. Leaves simple, ovate, or (2–)3-foliolate, leaflets sessile. Anthers 4.0–5.5 mm. *Flowers greenish; September.* Thorny bushveld, found in rocky (basalt) places and on sandy soils. *Pole Evans 3747.*

W S C N E

glauca Schinz

(= *Modecca glauca* Schinz)

Shrublike climber, up to 3.5 m high, with tendrils. Glands at leaf base 2. Leaves deeply 5-lobed. *Flowers yellow to greenish yellow; July to March.* Dry bushveld, in rocky places or on sandy soil. *Codd 4433.*

W S C N E

gummifera (Harv.) Harms var. gummifera

(= *Modecca gummifera* Harv.)

Subligneous climber, up to 30 m high. Gland at leaf base single, on a single median hemispherical to spathe-

late appendage. Leaves entire to 3(5)-lobed. *Flowers green, greenish white or creamy; October to April.* Common, in forest and scrub. *Codd 5966.*

W S C N E

hastata (Harv.) Schinz var. hastata

(= *A. schlechteri* Harms,
= *Modecca hastata* Harv.)

Herbaceous climber, up to 4 m high. Leaves simple, hastate, without glands at apex; glands at base on a ± semi-orbicular appendage. *Flowers cream to pale yellow; October to November.* Savanna, stony slopes, rocky hillsides, streambanks, and forest along watercourses. *Rogers 13273.*

W S C N E

hastata (Harv.) Schinz var. glandulifera W.J. de Wilde

Herbaceous climber, up to 4 m high. Leaves simple, hastate, with glands at apex; glands at base on 2 separate auricles or on a bilobed appendage. *Flowers cream to pale yellow; October to December.* Savanna, stony slopes, rocky hillsides, streambanks and forest along watercourses. *Buitendag 135.*

W S C N E

repanda (Burch.) Engl.

(= *Modecca repanda* (Burch.) Druce)

Suberect herb or woody climber, 0.2–2.0 m high. Leaves entire or irregularly repand to lobed, obovate to linear, midrib ending in a (sub)apical gland. *Flowers yellow; January.* Open or partly shaded places in woodland, among rocks, on sandy soils, red sand and granite. *Bremekamp & Schweickerdt 206.*

W S C N E

spinosa Burt Davy

Shrub, up to 1.5 m high, armed with thorns. Leaves entire, broadly ovate to elliptic; glands at base 1 or 2, sessile at top of petiole; 1 (sub)apical gland on blade.

Flowers greenish; July to January. Open bushland and scrub, in dry rocky (basalt) places. Codd 2997.

W S C N E

wilmsii Harms

Erect herb, 100–300(–500) mm tall, without tendrils. Leaves palmately (5)7-parted. Flowers greenish; October. Rocky places, dolomite outcrops or on red loam soil. Strey & Schlieben 3116.

W S C N E

Basananthe Peyr. (s. Afr.: 6 spp.) 5369000

De Wilde, 1976. F.S.A. 22: 120–124.

pedata (Baker f.) W.J. de Wilde

(= *Trypsohemma pedatum* Baker f.,
= *T. schlechteri* Schinz)

Erect annual or biennial herb, up to 500 mm tall. False stipules large, foliaceous. Leaves 3–7(–9)-lobed. Sepals 3.0–4.5 mm, with keeled nerves. Petals present. Flowers green to white; January. Sandy soil of riverbeds, or in gravelly or sometimes rocky soil. Meeuse 9573.

W S C N E

sandersonii (Harv.) W.J. de Wilde

(= *Trypsohemma sandersonii* Harv.,
= *T. viride* Hutch. & Pearce)

Perennial herb, 0.2–0.6 m high. False stipules absent. Leaves not lobed. Petals absent or 1 or 2. Flowers yellowish green; August to April. In (regularly burnt) grassland, in open scrub, forest edges, on sandy and rocky soil. Scheepers 760.

W S C N E

triloba (Bolus) W.J. de Wilde

(= *Trypsohemma trilobum* Bolus,
= *T. sagittatum* Hutch. & Pearce)

Creeping or climbing perennial herb, up to 0.7(–2.5) m high. False stipules large, foliaceous. Leaves 3-lobed. Sepals 5.0–7.5 mm, not keeled. Petals present. Flowers yellow to greenish yellow; September to February. On sandy or stony soil, in grassland, scrub and open forest. Killick & Strey 2515.

W S C N E

Paropsia Noronha ex A. Thouars

(s. Afr.: 2 spp.)

5369010

Sleumer, 1970. Bull. Jard. bot. nat. Belg. 40: 49–75.

braunii Gilg

Shrub or tree, up to 10 m high. Leaves elliptic to subovate-elliptic or oblong, lower surface persistently pilose to tomentose, petioles 5–6 mm long. Ovary sparsely pilose to glabrous at anthesis; styles glabrous at base. Capsule loosely and shortly pilose. Flowers whitish yellow; appearing before leaves; January. Sandveld, woodland. Sleigh s.n.

W S C N E

Passiflora L. (s. Afr.: 7 spp.)

5372000

De Wilde, 1976. F.S.A. 22: 124–128.

Bailey, 1977. Hortus Thrid: 825–826.

coerulea L.*

Climber. Bracts and bracteoles conspicuous, foliaceous, entire. Stipules foliaceous, 10–20 mm long, falcate, remotely dentate. Leaves (3)5(9)-lobed, incisions nearly to base. Flowers white or pinkish; corona purple at base, white at middle, blue at apex; November to December and in April. Garden ornamental. Native to South America. Repton 3145.

W S C N E

edulis Sims*

Climber, up to 15 m high. Bracts and bracteoles conspicuous, foliaceous, forming an involucre, serrate-denticulate. Stipules lanceolate or filiform. Leaves 3-lobed. Flowers white; corona threads purplish towards base; September to December and in March. Waste gardens, disturbed places and forest fringes. Native to South America. Kluge 603.

W S C N E

subpeltata Ortega*

Herbaceous creeper or climber, up to 5 m high. Bracts and bracteoles conspicuous, foliaceous, forming an involucre, entire or with a few minute gland teeth at base. Stipules 15–40 mm long, straight, entire, foliaceous. Leaves 3-lobed to halfway. Flowers white; August, December and March. Abandoned plantations, on forest edges, etc. Native to South America. Onderstall 1163.

W S C N E

PEDALIACEAE

Small trees, shrubs or herbs. Leaves opposite, often hairy and glandular (sticky), without stipules. Flowers irregular, weakly 2-lipped; nectarial glands present at base of pedicel. Petals 5, united. Stamens 4 fertile (2 shorter than the others) and 1 sterile, arising from corolla tube; anthers often coherent in pairs. Ovary superior, 2-locular. Fruit a capsule or nut, often 2-horned or with spines.

Key after Ihlenfeldt in F.Z. 8,3: 86–87 (1988).

- 1a Spiny shrub with trunk and main branches swollen, 1–4 m high; leaves deciduous, alternate on long shoots, fasciculate on short shoots in axils of spines; flowers in few-flowered raceme-like inflorescences; corolla with long cylindrical tube, slightly curved, produced near base into 10–15 mm long blunt spur; fruit a rigid woody capsule, laterally compressed, bilocular, each loculus divided by an incomplete false septum; seeds flat with broad membranous wings, up to 25 mm in diameter (wings included) **Sesamothamnus**
- 1b Perennial herb, sometimes with short swollen stem (if so, plant not taller than 500 mm), or annual, erect, ascending or procumbent; leaves never fasciculate in axils of spines; flowers axillary, solitary, very rarely in groups of 3, tube not spurred (except in *Holubia*), but sometimes slightly gibbous at base; fruit variable but never a laterally compressed woody capsule. 2
- 2a Fruit with a 1–20 mm-broad parchment-like wing on each of the 4 edges, laterally compressed, $\pm$ rectangular in cross section 3
- 2b Fruit without parchment-like wings 4
- 3a Annual erect herb; corolla cream, with a large sac-like spur at base; leaves circular-ovate, slightly lobed or sinuate; fruit up to 60 mm long and 50 mm broad, with wings up to 20 mm broad; veins of wings forming a dark network **Holubia**
- 3b Perennial herb with persistent short stem and tuberous root or swollen tuber-like, partially subterranean stem up to 150 mm tall from which annual erect branches arise; leaves linear to lorate, sinuate to pinnatifid; corolla yellowish to wine-red, without basal spur (but sometimes slightly gibbous at base); fruit up to 35 mm long and 41 mm broad, veins of wings indistinct **Pterodiscus**
- 4a Fruit a dehiscent non-woody capsule; erect annual or perennial herb 5
- 4b Fruit woody, either indehiscent or tardily dehiscent only at apex; armed with spines or hooks; procumbent or ascending annual or perennial herb 6
- 5a Capsule obtuse or truncate at apex, with 2 lateral horns at angles of apex (sometimes not very conspicuous); seeds never winged; largest leaves usually sagittate or 3-lobed **Ceratotheca**
- 5b Capsule without lateral horns at apex; seeds sometimes with conspicuous wings; leaves very variable **Sesamum**
- 6a Fruit disc-like with 2 erect conical spines from near centre; flowers on long slender pedicels, corolla obliquely campanulate, sub-bilabiate, white or pink, tube streaked inside with a darker colour **Dicerocaryum**
- 6b Fruit laterally compressed, ovate or oblong in lateral view, with 2 obtuse protruberances on each face, and in addition either with 2 rows of curved arms along both edges, each bearing recurved spines, or edges with 2 rigid wings bearing recurved spines; flowers shortly pedicelled, corolla tube cylindrical and constricted at base, lobes subequal, usually purple or yellow **Harpagophytum**

Ceratotheca Endl. (s. Afr.: 4 spp.) 7778000

Bruce. 1951. *Bothalia* 6,1: 233.
Ihlenfeldt. 1988. F.Z. 8,3: 94–97.

saxicola E.A. Bruce

Perennial herb, up to 450 mm tall. Leaves small, sub-orbicular to ovate, base truncate, cuneate or rarely subcordate; margins crenate. Calyx lobes oblong obtuse. Corolla $\pm$ 20 mm long. Capsule 8–9 $\times$ 5 mm, horns 0,7 mm long, bases rounded. *Flowers red; August, January and May*. Rock crevices. *Glen 1422*.

W	S	C	N	E
---	---	---	---	---

triloba (Bernh.) Hook. f.

(= *C. lamifolia* (Engl.) Engl.,
= *Sporledera triloba* Bernh.)

Annual or perennial herb, up to 2,5 m high. Leaves (in middle portion of stem) broadly cordate to trilobed, sometimes tripartite or digitate, margins coarsely crenate. Corolla 20–61 mm long. Capsule 15–28 $\times$ 5–7 mm, horns $\pm$ 8 mm long, each with broad triangular base, horizontal. *Flowers lilac to cream with purple stripes on anterior lobe, running down into throat; July to June*. Sandy soils, often in disturbed vegetation. *Codd 5236*.

W	S	C	N	E
---	---	---	---	---

Dicerocaryum Bojer (s. Afr.: 2 spp.) 7780000

Abels. 1975. *Mems Soc. broteriana* 25: 216–229.
Ihlenfeldt. 1988. F.Z. 8,3: 106–109.

eriocarpum (Decne.) Abels

(= *D. zangebarium* (Lour.) Merr. subsp. *eriocarpum* (Decne.)
Ihlenf.)

Prostrate perennial herb. Whole plant, including mature fruits, densely pubescent or villous, especially in leaf axils of main branches. Leaf lamina broadly ovate, crenate or serrate. Fruit circular to rotund in outline, central portion only slightly raised. *Flowers white to pink or mauve, occasionally violet or yellow; December to March*. Grassland on sand and on riverbanks. *Ihlenfeldt 2030*.

W	S	C	N	E
---	---	---	---	---

senecioides (Klotzsch) Abels subsp. senecioides

(= *Pretrea senecioides* Klotzsch)

Prostrate perennial herb, glabrous to weakly hairy. Leaf lamina 5–9-partite. Fruit broadly elliptic in outline, central portion conspicuously raised; with 2 $\times$ (4)5(6) seeds. *Flowers white to pink or mauve, occasionally violet or yellow; July to June*. Grassland or bushveld, in sandy soil; becoming weedy along roadsides. *Louw 801*.

W	S	C	N	E
---	---	---	---	---

senecioides (Klotzsch) Abels subsp. transvaalense Abels

Prostrate perennial herb, hairy to weakly hairy. Leaf lamina 5-lobed, long-petioled. Fruit broadly elliptic in outline, central portion conspicuously raised; with 2 $\times$ 3 seeds. *Flowers white to pink or mauve, occasionally violet or yellow; December to May*. Sandy soil in grassland or bushveld. *Collett 512*.

W	S	C	N	E
---	---	---	---	---

Harpagophytum DC. ex Meisn.

(s. Afr.: 2 spp.) 7771000

Ihlenfeldt & Hartmann. 1970. Mitt. Inst. Allg. Bot., Hamb. 13: 15–69.
Ihlenfeldt. 1988. F.Z. 8,3: 109–113.**procumbens (Burch.) DC. ex Meisn. subsp. procumbens**(= *Uncaria procumbens* Burch.,
= *H. burchellii* Decne.)Prostrate perennial herb. Leaves narrowly ovate, pinnatilobed with 5 main lobes, petiole two-thirds the length of lamina. Fruit with 4 rows of curved arms bearing recurved spines, length of longest arm 2–5 times the width of capsule proper. *Flowers with purple limb, tube light purple or pink, occasionally white, outside, yellow inside; February.* Deep red or brown sand in bush savanna, especially in overgrazed places. *Hutchinson 2970.*

W S C N E

procumbens (Burch.) DC. ex Meisn. subsp. transvaalense Ihlenf. & H.E.K. HartmannProstrate perennial herb. Leaves usually ovate, pinnatilobed with 3 main lobes, petiole as in subsp. *procumbens*. Fruit usually with 3 arms in each row, length of longest arm usually not exceeding twice the width of capsule proper. *Flowers with limb often yellow, tube as in subsp. procumbens; September to April.* Deep sand in open woodland. *Schlieben 9214.*

W S C N E

zeyheri Decne. subsp. zeyheri(= *H. peglerae* Stapf)Prostrate perennial herb. Leaves ovate, pinnatilobed, pinnatifid or crenate, at least some leaves distinctly pinnatilobed with 3 main lobes. Extrafloral nectaries 3 or 4 at base of each flower. Fruit with rigid wings or short arms, width of wings or length of longest arm up to half the width of capsule proper. *Flowers with purple or yellow limb, tube purple, violet, pink or yellow outside, yellow inside; September to March.* Deep, sometimes loamy sand in grassland, especially overgrazed places. *Schlieben 9565a.*

W S C N E

zeyheri Decne. subsp. schyffii Ihlenf. & H.E.K. HartmannProstrate perennial herb. Leaves deeply 7-lobed. Extrafloral nectaries 2–4 at base of each flower. Fruit triangular or lanceolate, wings up to three-quarters the width of capsule proper. *Flowers with purple limb, tube yellow; December and April.* Sandy soil. *Van Wyk 4585.*

W S C N E

Holubia Oliv. (s. Afr.: 1 sp.)

7772000

Ihlenfeldt. 1988. F.Z. 8,3: 89.

saccata Oliv.

Annual or sometimes biennial herb, 0,30–0,75 m high. Leaves subsucculent, circular to ovate, slightly lobed

or sinuate, petiolate. Flowers solitary. Corolla spurred. Fruit rotund to circular in lateral view, with 4 wings. *Flowers yellow-green, yellow, cream or white; December to August.* Disturbed vegetation, on roadsides, along riverbanks, usually in sandy soil. *Herman 787.*

W S C N E

Pterodiscus Hook. (s. Afr.: 4 spp.) 7769000

Ihlenfeldt. 1988. F.Z. 8,3: 89–94.

ngamicus N.E. Br. ex StapfPerennial herb, up to 300 mm tall. Basal organ a swollen stem arising from a subterranean tuber of $\pm$ the same diameter. Fruit usually rotund to circular in lateral view, beak distinct, 2–3 mm broad, wings of 2 sides not continuous at base, therefore base distinctly cordate. *Flowers with yellow tube, sometimes suffused with purple, lobes yellow, red or purplish, throat yellow; October to February.* Sandy soil, often calcareous soil and clay. *Meuse 10301.*

W S C N E

speciosus Hook.Perennial herb, up to 200 mm tall. Basal organ a short woody stem, not distinctly swollen, arising from a subterranean usually pyriform tuber. Fruit ovate to rotund in lateral view, a separate beak not discernible. *Flowers red-purple, lobes with darker stripes leading to dark red throat; October to May.* Alluvial soil in grassland. *Ellery 320.*

W S C N E

Sesamothamnus Welw. (s. Afr.:

3 spp.)

7774000

Ihlenfeldt. 1988. F.Z. 8,3: 87–89.

lugardii N.E. Br. ex StapfShrub, up to 4 m high. Branches spiny, spines 5–10 mm long, spreading to recurved. Leaves oblong to obovate, grey, densely covered with stellately branched mucilage glands. *Flowers cream, sometimes suffused with purple; September to January.* Calcareous soil or between rocks, in scrub communities. *Codd 6191.*

W S C N E

Sesamum L. (s. Afr.: 11 spp.)

7777000

Merxmüller. 1959. Mitt. bot. StSamml., Münch. 3: 1–8.

Ihlenfeldt. 1988. F.Z. 8,3: 97–106.

alatun Thonn.

Annual herb, 0,5–1,5 m high. Bracts of extrafloral nectaries minute. Corolla 20–30 mm long; inferior lip of flower not or little prominent. Capsule distinctly obconical in lateral view. Seeds winged, wings up to 2

mm long, testa foveolate. *Flowers pink or purple, sometimes spotted red within; August to May.* Sandy soils, riverbeds, grassland and open bush. *Leistner 636.*

W S C N E

capense *Burm. f.*

Herb, up to 1.5 m high. Lower leaves mostly 5- to 7-, upper mostly 3-lobed. Corolla 25–45 mm long. Seeds with wings all round or on 3 sides. *Flowers purple with dark purple throat; December to April.* Grassland; disturbed areas. *Stalmans 859.*

W S C N E

indicum *L.**

Annual herb, 0.1–1.2 m high. Leaves variable; inferior leaves entire or ± lobed to digitate, opposite or alternate. Bracts of extrafloral nectaries conspicuous. Inferior lip of flower not prominent. Seeds not winged but

with an inconspicuous double fringe, testa smooth or slightly venose. *Flowers white, pink or mauve-pink with darker markings; August and January to April.* Escaped from cultivation. Native to Europe and Asia. *Codd 2758.*

W S C N E

triphyllum *Welw. ex Asch. var. triphyllum*

(= *S. gibbosum* Bremek. & Oberm.)

Annual herb, 0.25–2.00 m high. Bracts of extrafloral nectaries minute. Corolla 30–50 mm long, inferior lip of flower not or little prominent. Capsule oblong in lateral view, abaxially gibbous at base. Seeds with short (sometimes minute) wings, testa faveolate. *Flowers mauve; July to June.* Grassland, roadsides, growing in limestone gravel and calcareous soil. *Huntley 1543.*

W S C N E

PERIPLOCACEAE

Herbs, shrublets or twining climbers, with milky latex or watery sap. Leaves opposite, without stipules. Flowers regular. Petals 5, united in a short tube, twisted in bud. Corona of 5 entire or segmented lobes often present, arising from corolla tube. Stamens 5, arising from corolla tube; anthers usually tapering in a narrow cone above stigma. Fruit comprising 2 follicles. Seed crowned with a tuft of long silky hairs.

Key after Dyer, Gen. 1: 470 (1975).

- 1a Corolla without distinct tube, divided nearly to base; erect or climbing shrubs 2
- 1b Corolla with campanulate or cylindrical tube up to 6 mm long 3
- 2a Corona lobes broadly obcordate or obreniform, with or without a dorsal process; stipules between leaf bases toothed or frilled *Mondia*
- 2b Corona lobes filiform or linear and divided above into 2 or 3 filiform segments; stipules represented by a line connecting leaf bases *Tacazzea*
- 3a Corona lobes inserted on corolla tube with stamens or occasionally on their filaments *Raphionacme*
- 3b Corona lobes inserted on corolla tube above base of stamens 4
- 4a Corona lobes inserted at mouth of corolla tube; stamens inserted at or near base of corolla tube; climbing or bushy shrubs ... *Stomatostemma*
- 4b Corona lobes inserted at about middle of corolla tube; plants mostly scrambling or climbing *Cryptolepis*

Cryptolepis *R. Br. (s. Afr.: 5 spp.)* 6740000

Brown. 1907. F.C. 4,1: 527–530.

Bullock. 1955. Kew Bull. 11: 279–282.

Venter. 1992. Pers. comm.

capensis *Schltr.*

Small climber, up to 5 m high. Leaves acute. Pedicels 1–2 mm long. Corolla lobes 6–10 mm long, linear-lanceolate, acuminate. *Flowers white; December.* Woodland or riverine thicket. *Reid 1171.*

W S C N E

cryptolepioides (*Schltr.*) *Bullock*

(= *C. transvaalensis* Schltr.,

= *Ectadiopsis cryptolepioides* Schltr.)

Woody climber, up to 5 m high. Leaves circular, acuminate, petioles 4–8 mm long. Corolla lobes shorter than 4 mm, oblong or linear-oblong. Corona lobes

clavate. *Flowers light green or greenish yellow; November to May.* Woodland, forest, riverbanks. *Dyer 9139.*

W S C N E

oblongifolia (*Meisn.*) *Schltr.*

(= *Ectadiopsis oblongifolia* (Meisn.) Schltr.)

Shrub, up to 1.5 m high. Leaves narrowly elliptic to narrowly obovate, acuminate, petioles 1–2 mm long. Corolla lobes shorter than 4 mm, oblong or linear-oblong. Corona lobes subterete or clavate. *Flowers yellow, white or pale greenish yellow; September to March.* Rocky hillsides. *Leach 11347.*

W S C N E

obtusata *N.E. Br.*

Climber, up to 4 m high. Leaves obtuse or retuse, apiculate. Pedicels 2–4 mm long. Corolla lobes 6–10

mm long, linear-lanceolate, acuminate. *Flowers white or cream; November to May.* Van der Schijff 2720.

W S C N E

Mondia Skeels (s. Afr.: 1 sp.) 6729000

Brown. 1907. F.C. 4,1: 541–542.
Bullock. 1961. Kew Bull. 15: 203.
Ross. 1978–79. Flower. Pl. Afr. 45: t. 1792.
Venter. 1992. Pers. comm.

whitei (Hook. f.) Skeels

(= *Chlorocodon whitei* Hook. f.,
= *Periploca latifolia* K. Schum.)

Woody climber, up to 10 m high. Stipules forming a band connecting the pair of petioles and divided into several horizontally spreading blunt teeth. Corona lobes broadly obcordate with subulate dorsal process. *Flowers greenish outside, purplish inside with distinctive yellowish marking; October to February.* In dense bush or forest. *Scheepers 1058.*

W S C N E

Raphionacme Harv. (s. Afr.: 15 spp.) 6747000

Brown. 1907. F.C. 4,1: 533–538.
Dyer. 1942. Flower. Pl. Afr. 22: t. 853.
Retief & Venter. 1983. S. Afr. J. Bot. 2,4: 326–328.

dyeri Retief & Venter

Perennial herb, 250 mm tall. Corolla lobes with inverted V-band of bright purple or magenta. Corona lobes tripartite, with central segment filiform, lateral segments corniculate. *Flowers green to purplish; October to January.* Grassland. *Venter s.n. (15/10/1990).*

W S C N E

galpinii Schltr.

(= *R. elata* N.E. Br.,
= *R. macrorrhiza* Schltr.)

Erect herb with large underground tuber, up to 0,6 m high, densely pubescent to sparsely puberulent on stems and leaves. Sepals 4–5 mm long, subulate, acute, longer than corolla tube. Corona lobes trifid. *Flowers green, purple at base; August to January.* Grassland. *Codd 8065.*

W S C N E

hirsuta (E. Mey.) R.A. Dyer ex E. Phillips

(= *R. divaricata* Harv.,
= *R. pubescens* (Hochst.) Hochst.)

Herb with large tuberous root, 50–400 mm tall, glabrous or pubescent with short spreading hairs. Stems dichotomously branched. Sepals 2–3 mm long, lanceolate, as long as or longer than corolla tube. Corona lobes variable, entire or toothed. *Flowers purple to pink; July to January.* Grassland. *Codd 6163.*

W S C N E

monteiroae (Oliv.) N.E. Br.

(= *Chlorocyathus monteiroae* Oliv.)

Twining shrub with tuberous rootstock, up to 8 m high. Stems, leaves and inflorescence pubescent. Sepals 2–3 mm long, ovate, acute, pubescent, shorter than corolla tube. Corona lobes trifid. *Flowers green to yellow-green; November to May.* Mixed woodland. *Zambatis 1605.*

W S C N E

procumbens Schltr.

Procumbent herb, 50–100 mm, velutinous. Sepals 2–4 mm long, ovate-lanceolate, acuminate, longer than corolla tube. Corona lobes trifid. *Flowers lime-green to green or green striped purple; corona purple; October to February.* Grassland of rocky or stony hillsides or mountainsides. *Codd 8151.*

W S C N E

velutina Schltr.

(= *R. burkei* N.E. Br.,
= *R. dinteri* Schltr.)

Herb with large underground tuber, up to 200 mm tall. Leaves puberulous below, glabrous or scabrous-hirsute above. Sepals twice or more times as long as broad, narrow, very acute, shorter than corolla tube or rarely equalling it. Corona lobes deeply trifid. *Flowers green; September to March.* Grassland. *Dyer & Verdoorn 4212.*

W S C N E

Stomatostemma N.E. Br. (s. Afr.:

1 sp.)

6741000

Brown. 1907. F.C. 4,1: 530–531.
Venter & Verhoeven. 1993. S. Afr. J. Bot. 59,1: 50–56.

monteiroae (Oliv.) N.E. Br.

(= *Cryptolepis monteiroae* Oliv.)

Climber, up to 10 m high. Leaves narrowly ovate, ovate, elliptic or obovate. Corolla broadly campanulate. Corona lobes clavate, 2 mm long, arising from sinuses between corolla lobes. Stamens from base of corolla tube. *Flowers creamy white to yellowish green with maroon to purple to brownish purple centre; October to March.* Dry woodland, mainly of rocky hillsides. *Germishuizen 482.*

W S C N E

Tacazzea Decne. (s. Afr.: 1 sp.) 6730000

Brown. 1907. F.C. 4,1: 540–541.
Bullock. 1954. Kew Bull. 10: 354–355.
Venter *et al.* 1990. S. Afr. J. Bot. 56,1: 93–112.

apiculata Oliv.

(= *T. kirkii* N.E. Br.,
= *T. verticillata* K. Schum.)

Woody climber, up to 10 m high. Leaves glabrous or ± densely pubescent below, apex rounded or emarginate

and apiculate, base rounded or cordate. Corolla glabrous. Corona lobes intertwined above stigma, glabrous. *Flowers pale green to pale yellow or reddish; November to March.* In damp riverine forest, especially

towards drier fringes of rain forest. *Codd & De Winter 5056.*

W S C N E

PHYTOLACCACEAE

Large, ± shrubby herbs or rarely trees. Leaves alternate, without stipules. Flowers small, regular, in terminal spikes opposite leaves or in axils. Sepals 4 or 5, free. Petals absent. Stamens 5 to numerous, borne on a disc. Ovary superior, comprising 4–12 free or ± united carpels; styles free, as many as carpels. Fruit a berry.

Key after Dyer, Gen 1: 76 (1975).

Ovary of 1 carpel; fruit juicy Rivina
Ovary of 5–16 carpels; fruit a lobed berry Phytolacca

Phytolacca L. (s. Afr.: 5 spp.) 2380000
Nowicke. 1968. Ann. Mo. bot. Gdn. 55: 306–320.

americana L.*
(= *P. decandra* L.)
Succulent herb, up to 1 m high. Inflorescence a raceme. Flowers pedicellate. Carpels completely united. Ripe fruits dark purple-black. *Flowers pink; January to March.* Forest margins, disturbed sites. Region of origin uncertain. *Scheepers 895.*
W S C N E

heptandra Retz.
(= *P. stricta* O. Hoffm.)
Slender herb, up to 1 m high. Inflorescence a few-flowered spike. Flowers perfect. Carpels completely free. Fruit a collection of 5–7 drupelets, each 2 or 3 mm long. *Flowers green; October to January.* Grassland, vleis. *Jenkins sub TRV 11034.*
W S C N E

octandra L.
(= *P. americana* L. var. *mexicana* L.)
Herb, up to 2 m high. Inflorescence a spike. Flowers perfect. Carpels completely united. Fruit a berry, 7–10-ribbed, purplish black when ripe. *Flowers white; November to April.* Grassland, riverbanks. *Liebenberg 8539.*
W S C N E

Rivina L. (s. Afr.: 1 sp.) 2370000
Stannard. 1988. F.Z. 9,1: 169.

humilis L.*
Herb, up to 0,7 m high. Leaves ovate. Inflorescence an axillary raceme. Berries red when ripe. *Flowers white; February.* Weed in gardens. Native to tropical and subtropical America. *De Winter 8327.*
W S C N E

PIPERACEAE

Herbs or shrubs, erect or scandent. Leaves alternate, entire. Inflorescence usually a dense spike. Flowers minute, bisexual or unisexual, without a perianth. Stamens 2–6, free. Ovary superior, 1-locular; stigmas 1–5. Fruit baccate, with a succulent, thin or dry pericarp.

Key after Dyer, Gen. 1: 29 (1975).

Shrubs; stamens 2–6, anther thecae usually distinct; stigmas 2–4 Piper
Herbs; stamens 2, anther thecae usually confluent; stigma 1 Peperomia

Peperomia Ruiz & Pav. (s. Afr.: 4 spp.) 1866000
Düll. 1973. Bot. Jb. 93,1: 56–129.

blanda (Jacq.) Humb., Bonpl. & Kunth var. leptostachya (Hook. & Arn.) Düll
(= *P. arabica* Decne.)
Succulent herb, up to 30 mm tall, epiphyte. Leaves opposite, pilose. *Spikes green. Flowering January to July.* On rock, in shade. *Van der Schijff & Marais 3761.*
W S C N E

retusa (L.f.) A. Dietr.

(= *P. retusa* (L.f.) A. Dietr. var. *ciliolata* C. DC.)

Mat-forming succulent herb, up to 150 mm tall, epiphyte. Leaves alternate, elliptic. *Spikes light green. Flowering December to April.* On tree trunks or rocks in shade. *Stalmans 339.*

W S C N E

tetraphylla (G. Forst.) Hook. & Arn.

(= *P. reflexa* (L.f.) A. Dietr.)

Mat-forming, succulent herb, up to 200 mm tall, epiphyte. Leaves in whorls of 3 or 4 at nodes. *Spikes yellowish green. Flowering January to September.* On tree trunks or rocks in shade. *Scheepers 69.*

W S C N E

Piper L. (s. Afr.: 1 sp.)

1862000

Killick. 1970. Flower. Pl. Afr. 40: t.1583.

capense L.f.

Soft-wooded, straggling shrub, up to 4.5 m high. Inflorescence a catkin, dull white. Leaves dark glossy green and glabrous above, blade ovate, 70–150 × 50–110 mm, 5–7-nerved, 'quilted'. *Flowering July to March.* Forest. *Mohle 183.*

W S C N E

PITTOSPORACEAE

Shrubs, trees or climbers, resinous. Leaves alternate. Flowers regular. Petals 5, free, with ± erect basal portion and reflexed tips. Stamens free; anthers opening by means of pores. Ovary superior; style simple. Fruit a capsule, opening by means of 2 valves. Seeds mostly covered with a sticky pulp.

Pittosporum Banks ex Gaertn.

(s. Afr.: 3 spp.)

3252000

Cufodontis. 1960. F.Z. 1: 299–300.

Friis. 1987. Kew Bull. 42: 319–335.

viridiflorum Sims

Shrub or small tree, up to 10 m high. Leaves obovate to oblanceolate, lower surface with conspicuous net-veining. Capsule with orange-red, sticky seeds. *Flowers dull white; September to January.* Woodland, river bush, stony ridges. *Westfall 712.*

W S C N E

PLANTAGINACEAE

Herbs. Leaves alternate, clustered in a basal rosette, often forming a sheath at base, parallel-veined, without stipules. Inflorescence stalk long, erect, leafless. Flowers small, regular, greenish or white, arranged in dense spikes. Petals 4, united, papery. Stamens 4, arising from corolla tube; anthers protruding on long filaments. Ovary superior. Fruit a capsule, opening by means of a lid. Seeds often mucilaginous when wet.

Plantago L. (s. Afr.: 12 spp.)

8116000

Glen. Unpublished F.S.A. manuscript.

aristata Michx.*

Perennial herb, up to 200 mm tall. Leaves amplexicaul, cauline. Bracts long, conspicuous, projecting well beyond flowers. *Flowers greenish or whitish; September to May.* Along edges of rivers and streams. *Anderson A116.*

W S C N E

lanceolata L.*

Rosulate perennial herb. Leaves petiolate, linear to narrowly lanceolate or oblanceolate. Spike less than half as long as peduncle. *Flowers green, cream or white; September to April.* Weed of cultivation and disturbed places. Native to Europe and Asia. *Balsinhas 2764.*

W S C N E

longissima Decne.

(= *P. longissima* Decne. var. *burkei* Pilg.,
= *P. longissima* Decne. var. *densiuscula* Pilg.)

Rosulate perennial herb. Leaves petiolate, elliptic, ovate or obovate, glabrous or with isolated hairs. Seeds 2–4 per capsule. *Flowers greenish or whitish; September to May.* Along edges of rivers and streams. *Anderson A116.*

W S C N E

major L.*

(= *P. dregeana* Decne.)

Rosulate perennial herb. Leaves petiolate, elliptic, ovate or obovate, with scattered hairs. Seeds 15–25 per capsule. *Flowers greenish; October to June.* Weed of moist, sunny places. Native to Europe and Asia. *Brendenkamp 542.*

W S C N E

myosuroides Lam.*

Rosulate annual herb. Leaves petiolate, linear to narrowly lanceolate or oblanceolate, with scattered hairs. Spike more than half as long as peduncle. *Flowers cream and green.* Weed in grassy vleis. Native to South America. *Codd 9885.*

W S C N E

virginica L.*

Rosulate annual herb. Leaves petiolate, obovate or narrowly spatulate, densely woolly. Spike more than half as long as peduncle. *Flowers white and brown; September to April.* Weed along roadsides or in grassland. Native to America. *Crawford 343.*

W S C N E

PLUMBAGINACEAE

Herbs or shrubs. Leaves alternate, often in a basal rosette, without stipules. Flowers regular. Sepals fused into cylindrical tube, ribbed, often with glandular hairs. Petals 5, fused into a tube. Stamens 5, opposite and fused to petals. Ovary superior, 1-locular; style divided above into 5 branches. Fruit a nut, enclosed by persistent calyx tube.

Plumbago L. (s. Afr.: 5 spp.)

6343000

Dyer. 1963. F.S.A. 26: 16–19.

auriculata Lam.(= *P. capensis* Thunb.)

Shrub or scrambler, up to 2 m or more high. Leaves oblong or oblong-spathulate, sometimes lepidote on undersurface. Axis of spike generally puberulous. Calyx setae glandular-capitate, absent from basal third. Corolla 40–50 mm long. *Flowers pale blue; June to March.* In bush and scrub. *Codd & De Winter 5162.*

W S C N E

zeylanica L.

Shrub, 1 m high, rarely up to 2 m high. Leaves ovate or oblong-ovate to ovate-lanceolate, lepidote. Axis of spike glandular. Calyx with glandular-capitate setae from base to apex. Corolla up to 30 mm long. *Flowers white; July to June.* Under trees or shrubs on flats or hillsides, sometimes open grassland. *Codd 3752.*

W S C N E

PODOSTEMACEAE

Submerged, freshwater herbs, growing attached to rocks in swift-flowing water. Leaves with floating, often linear to filiform dissected laminas and/or with small, moss-like or reduced and bract-like ones. Flowers bisexual, with or without persistent spathe. Perianth with 2 or 3 segments, free or connate at base. Stamens 1–many. Ovary superior, 1-, 2- or 3-locular. Fruit a capsule.

Key after Obermeyer in F.S.A. 13: 205 (1970).

Spathella absent; perianth equally 3-partite, fused below; plants moss-like **Tristicha**

Spathella present, enveloping the bud, splitting irregularly, persistent; perianth consisting of 2 minute, subulate segments

..... **Sphaerotherylax****Sphaerotherylax Bisch. (s. Afr.: 1 sp.)**

3159000

Obermeyer. 1970. F.S.A. 13: 209–211.

algiformis Bisch.

Herb first with thaloid body and later with long stems up to 200 mm and 1 mm in diameter. Leaves floating, filiform, branching dichotomously, 20–50 mm long. Flowers aggregated in dense, sessile clusters at intervals along stem or on thallus. Capsule ellipsoid, with 8–10 ribs. Rivers or streams. *Wager sub PRE 53334.*

W S C N E

Tristicha A. Thouars (s. Afr.: 1 sp.)

3140000

Obermeyer. 1970. F.S.A. 13: 206.

trifaria (Bory ex Willd.) Spreng. subsp. trifaria(= *Dufouria trifaria* Bory ex Willd.,= *T. hypnoides* Spreng.)

Moss-like plant with leafy branches, elongating in relation to the depth of submergence. Spathella absent, perianth equally 3-partite, fused below. Seed orange-brown, oblong, rounded. *Flowers green; January.* Rivers, streams. *Wager sub PRE 16627.*

W S C N E

POLYGALACEAE

Herbs or shrubs. Leaves alternate, without stipules. Flowers irregular. Sepals 5, inner 2 wing-like and petal-like. Petals $\pm$ reduced, 3–5, one often with a brush-like appendage. Stamens 8, united into a tube (split above) and fused to the petals; anthers opening by means of apical pores. Ovary superior, 2-locular. Fruit usually a capsule. Seeds usually with an aril or caruncle, often covered with short hairs.

Key after Dyer, Gen. 1: 303 (1975).

- 1a Ovary 1- or 2-locular; fruit winged *Securinega*
 1b Ovary 2- or 3-locular; fruit a capsule 2
 2a Sepals unequal, laterals larger than the others, often coloured and wing-like *Polygala*
 2b Sepals subequal *Muraltia*

Muraltia Juss. (s. Afr.: 116 spp.) 4278000

Levyns. 1954. JI S. Afr. Bot., Suppl. 2.

empetroides Chodat

(= *M. azurella* Chodat,
= *M. conjuncta* Chodat)

Shrublet, up to 200 mm tall. Leaves flat, midrib prominent below, apical spine strongly recurved. Sepals glabrous, margin ciliate, spine-tipped, spine straight. Leaves and young branches hispid. *Flowers mauve; July to June*. Montane grassland. *Codd 7848*.

W S C N E

flanaganii Bolus

(= *M. ecomuta* N.E. Br.)

Shrublet, up to 1 m high. Leaves acicular or linear, sometimes revolute, 5–10 × 2 mm. Side petals as long as carina. Capsule glabrous, oblong, apical projections short or very short. *Flowers white and mauve; August to May*. Plateaux on mountain tops. *Van der Schijff 6187*.

W S C N E

Polygala L. (s. Afr.: 86 spp.) 4273000

Harvey. 1860. F.C. 1: 80–94.

Levyns. 1955. JI S. Afr. Bot. 21: 9–49.

Exell. 1960. F.Z. 1: 307–336.

Friedrich-Holzhammer & Merxmüller. 1973. F.S.W.A. 73: 1–7.

africana Chodat

(= *P. capillaris* E. Mey. ex Harv. p.p.)

Small, erect, annual herb, up to 150 mm tall. Leaves linear or filiform, 5 × 0.5 mm. Inflorescences terminal, projecting well beyond leaves. Wings 1.5–2.0 mm long, broadly elliptic. *Flowers purplish pink; March to May*. Wet grassland, vleis, streambanks, rock depressions. *Germishuizen 2863*.

W S C N E

albida Schinz var. albida

Annual herb, up to 0.6 m high. Leaves linear to narrowly elliptic 15–100 × 2–15 mm. Flowers with pedicels deflexed, 3–4 mm long, in dense terminal and lateral racemes. *Flowers greenish white, mauve; July*

to June. Bushveld, grassland, woodland. *Germishuizen 3848*.

W S C N E

amatymbica Eckl. & Zeyh.

Densely tufted perennial herb, up to 120 mm tall. Lower leaves ovate, upper ones elliptic, midribs prominent, apices acuminate, mucronate. *Flowers purple; October to April*. Grassland. *Germishuizen 3379*.

W S C N E

capillaris E. Mey. ex Harv.

Annual herb, up to 500 mm tall. Leaves linear to lorate, 3–7 × 0.5–1.0 mm. Wings 1.5–2.0 mm long, broadly elliptic. *Flowers in elongated, terminal racemes, purple, greenish white; December to April*. Grassland. *Mauve 5066*.

W S C N E

erioptera DC.

Annual herb, up to 400 mm tall. Leaves linear-oblong-elliptic to narrowly oblong-elliptic, 8–30 × 1.5–6.0 mm. Wings elliptic, up to 5 × 2.5 mm with longitudinal green stripe. Corolla pubescent. *Flowers greenish white; March*. Grassland. *Gertenbach 5082*.

W S C N E

galpinii Hook. f.

Herb, shrub or small tree, up to 2.5 m high. Leaf blades with inconspicuous veins, lanceolate to elliptic-lanceolate, long-acuminate, sparsely pubescent to pilose above. Racemes axillary or terminating the branchlets, many-flowered. *Flowers about 14 mm long, white, pale pink or light purple; October to March*. Forest fringes, kloofs. *Leistner 524*.

W S C N E

gerrardii Chodat

Perennial herb, up to 90 mm tall. Leaves elliptic, 9–11 × 6 mm, acute, lamina coriaceous, conspicuously reticulate-veined on both surfaces. Flowers solitary in leaf axils. *Flowers blue or lavender; October to February*. Grassland, bushveld. *Young 187A*.

W S C N E

gracilentia *Burr Davy*

Herb, up to 300 mm tall, many-stemmed from woody rootstock. Leaves oblong-lanceolate to linear-lanceolate, acute, flat, not recurved at point, 10–24 × 2–5 mm. Raceme contracted, usually about 10-flowered. *Flowers deep mauve; November.* Grassland. Turner 1186.

W	S	C	N	E
---	---	---	---	---

hottentotta *Presl*

Perennial herb or shrublet, up to 0,6 m high. Stems wiry, green. Leaves lorate to linear, 10–40 × 0,5–2,0 mm. Carina 6 mm long with crest 2–3 mm long. *Flowers yellowish white, pale purple or pink; October to March.* Grassland, woodland. Venter 9178.

W	S	C	N	E
---	---	---	---	---

leptophylla *Burch.*

(= *P. armata* Chodat)

Dwarf shrub, up to 500 mm tall, divaricately much-branched. Leaves few and distant, patent, linear, apex obtuse or mucronulate. Racemes mostly terminal, many-flowered. Pedicels very short. *Flowers pendulous, 7–10 mm long, purple to white with alae whitish with green veins; September to March.* Sandy or rocky soil. Gubb 132/63.

W	S	C	N	E
---	---	---	---	---

marensis *Burr Davy*

(= *P. rogersii* Burr Davy)

Shrublet with branchlets densely greyish pubescent. Wings 6–8 mm long. Apical lobes of ovary pointed. *Flowers purplish blue; January to March.* Sandy soil. Pole Evans 4579.

W	S	C	N	E
---	---	---	---	---

natalensis *Chodat*

Perennial herb, up to 150 mm tall. Leaves narrowly ovate to obovate or elliptic, up to 30 mm long. *Flowers purplish pink; February.* Grassland. Blenkiron sub TRV 797.

W	S	C	N	E
---	---	---	---	---

nodiflora *Chodat*

Perennial herb, up to 70 mm tall. Leaf lamina coriaceous, conspicuously reticulate-veined, ciliate or sparsely hirsute, ovate to subcordate-ovate, mucronate. Flowers solitary in leaf axils, pedicels short, hairy. Grassland. Young 487A.

W	S	C	N	E
---	---	---	---	---

ohlendorffiana *Eckl. & Zeyh.*

Perennial herb, up to 150 mm tall. Stems slender, crisped-pubescent and sparsely pilose, prostrate or sprawling. Leaves ovate to broadly elliptic, 5–15 × 3–9 mm. Pedicels 2–4 mm long. Wings 5–7 mm long. *Flowers purple or pink; September to February.* Montane grassland. Codd 5649.

W	S	C	N	E
---	---	---	---	---

producta *N.E. Br.*

Erect herb, up to 1,5 m high. Stems slightly winged. Leaves rounded or subacute at apex, linear to lorate, 10–30 × 1,0–5,5 mm. Elongated terminal racemes up to 200 mm long. Wing sepals 4,5–5,0 × 2,5 × 3,0 mm. *Flowers pink or purple; October to January.* Grassland. Lavranos 21839.

W	S	C	N	E
---	---	---	---	---

rehmannii *Chodat*

Perennial herb, up to 300 mm tall. Leaves 10–25 × 1,5–4,0 mm, linear-lanceolate or linear-elliptic. Wing sepals 6–8 × 3–4 mm, elliptic, glabrous. Carina 7,0 × 2,5 mm, crest 1,5 mm long. *Flowers blue or greenish blue.* Grassland. No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

senensis *Klotzsch*

(= *P. rogersiana* Baker f.)

Erect, much-branched shrublet. Leaves obovate-lanceolate. Inflorescence axillary. Wings 6–10 mm in diameter, with ciliolate margins. Caruncular appendage nearly as long as seed. *Flowers with wings yellow, keel fringed, purple; March.* Grassland. Germishuizen 5139.

W	S	C	N	E
---	---	---	---	---

sphenoptera *Fresen.*

(= *P. ukambica* Chodat,
= *P. quartiniana* A. Rich.)

Annual or perennial herb, up to 1 m high. Inflorescences 30–140 mm long. Wings 4–7 mm in diameter, suborbicular in outline, glabrous, usually tinged with purple round extreme margin. *Flowers yellow and purple; September to May.* Grassland and bushveld. Venter 2982.

W	S	C	N	E
---	---	---	---	---

spicata *Chodat*

(= *P. schlechteri* Schinz)

Annual herb, up to 400 mm tall. Leaves linear to lorate, 5–8 × 0,5–1,0 mm, glabrous, often scarcely developed, sometimes slightly broader at extreme base of stem. Flowers in many-flowered terminal racemes up to 100 mm long. *Flowers white or yellow.* Grassland. Schlechter sub TRV 1315.

W	S	C	N	E
---	---	---	---	---

uncinata *E. Mey. ex Meisn.*

(= *P. hamata* Burr Davy)

Leaves uncinat, rounded at tips with recurved apices. Flowers in terminal racemes. Wings 4,0–6,5 mm long. *Flowers purple or blue; August to May.* Grassland. Bredenkamp 180.

W	S	C	N	E
---	---	---	---	---

virgata *Thunb. var. decora* (Sond.) Harv.

(= *P. virgata* Thunb. var. *speciosa* (Sims) Harv.)

Shrub, up to 3 m high, virgately branched. Wings slightly longer than broad, up to 14–15 mm long but

sometimes shorter, conspicuously veined. *Flowers deep purple to pale lilac; July to June.* Grassland, forest margins. *Mohle 293.*

W S C N E

wilmsii Chodat

Erect perennial herb, up to 150 mm tall. Stems and leaves pilose. Leaves narrowly elliptic, 6–20 × 1–5 mm. Flowers in terminal racemes. Wings 2,5–4,0 mm long. *Flowers pink or yellowish purple; December to March.* Montane grassland. *Stalmans 904.*

W S C N E

Securidaca L. (s. Afr.: 1 sp.)

4275000

Exell. 1960. F.Z. 1: 304–307.

longepedunculata Fresen.

Small tree, up to 6 m high. Young stems usually densely pubescent. Leaves broadly oblong to narrowly elliptic, 10–50 × 5–18 mm. Fruit 30–50 × 8–20 mm with an oblong or elliptic, somewhat obliquely curved wing. Nut 8–10 mm in diameter, rugulose or smooth. *Flowers pink, purple and white; October to March.* Woodland. *Germishuizen 979.*

W S C N E

POLYGONACEAE

Herbs or shrublets. Stems often with ± swollen nodes. Leaves alternate; stipules ± papery, forming a tube (ocrea) around stem and above node. Flowers small, regular. Sepals usually petal-like. Petals absent. Stamens 5–8, free. Ovary superior, 1-locular; styles 2–4, free. Fruit a lens-shaped or triangular nut often enclosed by persistent membranous sepals.

Key after Germishuizen (pers. comm.).

- 1a Outer perianth segments bearing short spines 2
- 1b Outer perianth segments without spines 3
- 2a Spines forming at tip of outer perianth segments; flowers monoecious; female flowers sessile in axillary clusters *Emex*
- 2b Spines forming at base of outer perianth segments; flowers bisexual, in fascicles forming a lax raceme *Oxygonum*
- 3a Perianth segments usually 6; inner 3 segments accrescent with entire, dentate or wavy margins *Rumex*
- 3b Perianth segments 4 or 5, not accrescent 4
- 4a Soft, annual herbs; nut at least twice as long as perianth *Fagopyrum*
- 4b Coarse herbs, climbers or rhizomatous perennials; nut included in perianth or protruding for less than half its length 5
- 5a Perianth constricted above ovary and persistent at apex of fruit; heterostylous *Oxygonum*
- 5b Perianth not constricted above ovary, enclosing fruit; not heterostylous 6
- 6a Outer perianth segments winged or keeled in fruit; leaves conspicuously cordate; twining annuals *Fallopia*
- 6b Outer perianth segments not winged or keeled in fruit; leaves distinctly longer than wide, rarely cordate 7
- 7a Ocreae silvery hyaline, lacerating *Polygonum*
- 7b Ocreae brown, membranous, truncate, fringed with cilia or bristles or entire *Persicaria*

Emex Neck. (s. Afr.: 1 sp.)

2194000

Henderson & Anderson. 1966. Common weeds in South Africa: 80–81. Graham. 1958. F.T.E.A. Polygonaceae: 3. *Germishuizen. Pers. comm.*

australis Steinh.*

(= *E. centropodium* Meisn.,
= *E. podocentrum* Meisn.)

Annual herb, up to 0,6 m high. Flower and fruit (nut) with a terminal spiny arista and outer edge with very sharp, rigid spreading spines. Surface of tube perforated. *Flowers green to whitish; May to October.* Waste places and disturbed areas. Country of origin unknown. *Scsheepers sub PRE 56520.*

W S C N E

esculentum Moench*

(= *Polygonum fagopyrum* L.)

Annual herb, up to 0,6 m high. Leaves triangular-sagittate, cordate at base. Nut accrescent, pale brown, matt, sharply trigonous. *Flowers white or cream; December to May.* Disturbed areas. Native to Central Asia. *Collins sub TRV 9653.*

W S C N E

Fallopia Adans. (s. Afr.: 1 sp.)

2201040

Webb. 1964. Fl. Europ. 1: 80. *Germishuizen. Pers. comm.*

convolvulus (L.) Holub*

(= *Bilderdykia convolvulus* (L.) Dumort.,
= *Polygonum convolvulus* L.)

Climbing annual herb, up to 10 m high. Leaves basally cordate. Inflorescence a slender lateral cyme. Nut trigonous, enclosed in persistent perianth. *Flowers green with white margins; October to May.* Disturbed

Fagopyrum Mill. (s. Afr.: 1 sp.)

2202000

Graham. 1958. F.T.E.A. Polygonaceae: 25. *Germishuizen. Pers. comm.*

soils and cultivated ground. Native to Europe and Asia. *Ubbink 1285.*

W S C N E

Oxygonum Burch. ex Campd.

(s. Afr.: 6 spp.)

2204000

Graham. 1957. Kew Bull. 1957: 145-172.
Germishuizen. 1988. Bothalia 18: 173-181.

alatum Burch. var. alatum

(= *O. alatum* Burch. var. *incisum* Sond.,
= *O. alatum* Burch. var. *marlothii* Engl.)

Annual herb, up to 500 mm tall. Entire plant covered with whitish cup-shaped scales. Nut winged at 3 angles. *Flowers pink or white; December to April.* Semi-arid grassland, open woodland, disturbed areas. *Story 767.*

W S C N E

delagoense Kuntze

(= *O. delagoense* Kuntze var. *strictum* C.H. Wright,
= *O. junodii* De Wild)

Annual herb, up to 1 m high. Ocreae fringed with rigid setae. Leaves narrowly linear, sometimes lobed, densely strigose hairy. *Flowers pink or white; October to March.* Grassland, sandy soil. *Pienaar 336.*

W S C N E

dregeanum Meisn. subsp. canescens (Sond.) Germish.

var. **canescens**

(= *O. calcaratum* Meisn.,
= *O. zeyheri* Sond.)

Annual herb, up to 500 mm tall. Leaves deeply 3-9-lobed, only lower lobes shallowly divided again. *Flowers white; October to March.* Grassland, thornveld, on red sands. *Retief 647.*

W S C N E

dregeanum Meisn. subsp. canescens (Sond.) Germish.

var. **dissectum Germish.**

Annual herb, up to 500 mm tall. Leaves deeply lobed, lobes in turn again divided and ending in long slender tips. *Flowers white; November to February.* Grassland, sandy soils. *Bredenkamp & Van Vuuren 123.*

W S C N E

dregeanum Meisn. subsp. canescens (Sond.) Germish.

var. **linearifolium Germish.**

Annual herb, up to 500 mm tall. Stem and leaves often dotted with black glands. Leaves linear, rarely with 1 or 2 short teeth at base of lower leaves. *Flowers white, tinged pink; October to March.* Grassland, sour bushveld, disturbed areas. *Germishuizen 5059.*

W S C N E

dregeanum Meisn. subsp. canescens (Sond.) Germish.

var. **lobophyllum Germish.**

Annual herb, up to 500 mm tall. Leaves shallowly and deeply lobed, but not divided up to midrib, lobes usually wider than 2 mm. *Flowers white; October to Feb-*

ruary. Woodland, bushveld and grassland. *Zambatis 1470.*

W S C N E

dregeanum Meisn. subsp. canescens (Sond.) Germish.

var. **pilosum Germish.**

Annual herb, up to 500 mm tall, densely covered with long white pilose hairs. Leaves divided, lobes at base of leaves longer than 15 mm. *Flowers white; November to January.* Savanna, sandy soils. *Van Wyk 2679.*

W S C N E

dregeanum Meisn. subsp. lanceolatum Germish.

Annual herb, up to 300 mm tall. Rootstock perennial. Leaves lanceolate, margins deep wine-red. *Flowers large, white, deep pink to wine-red, tinged along centre on 3 outer lobes; September to March.* Open and montane grassland. *Stalmans 634.*

W S C N E

dregeanum Meisn. subsp. swazicum (Burtt Davy) Germish.

(= *O. dregeanum* Meisn. var. *swazicum* (Burtt Davy) R.A. Graham,
= *O. zeyheri* Sond. var. *swazicum* Burtt Davy)

Perennial herb, up to 500 mm tall. Leaves deeply linear-lobed. Ocrea unevenly lobed. *Flowers white to cream, sometimes tinged pink; November to April.* Grassland, marshy areas. *Germishuizen 2918.*

W S C N E

sinuatum (Hochst. & Steud. ex Meisn.) Dammer

(= *Ceratogonum sinuatum* Hochst. & Steud. ex Meisn.,
= *Ceratogonum cordofanum* Meisn.)

Annual herb, up to 0,6 m high. Leaves with broad lobes. Nut trigonous, conical at base and apex with sharp spreading spine from each angle below the middle, with 3 smaller prickles at centre of angles. *Flowers white; November to March.* Grassland and rocky woodland, disturbed areas. *Germishuizen 3749.*

W S C N E

Persicaria Mill. (s. Afr.: 9 spp.)

2201030

Wilson. 1990. Kew Bull. 45: 621-636.
Germishuizen. Pers. comm.

amphibia (L.) Gray*

(= *Polygonum amphibium* L.)

Perennial herb. Leaves broadly elliptic, floating, lamina base rounded, petiole longer than 5 mm. Nut lenticular. *Flowers red to deep pink; September to May.* In ponds, ditches, dams, waterways. Native to North America, Europe and Asia. *Nelson 226.*

W S C N E

attenuata (R. Br.) Soják subsp. africana K.L. Wilson

Perennial herb, up to 2 m high, strigose hairy throughout. Ocreae fringed with long hard bristles, equalling tube. Nut biconvex-lenticular. *Flowers white to pale pink; November to March.* Grassland, damp places,

along rivers and streams, marshy areas. *Germishuizen 1240.*

W S C N E

hydropiper (L.) Spach*
(= *Polygonum hydropiper* L.)

Annual herb, up to 1 m high. Perianth glandular punctate. Nut lenticular, nut face convex. *Flowers greenish white; December to April.* Damp places, often growing in water, streambanks. Native to Europe. *Codd 6946.*

W S C N E

lapathifolia (L.) Gray*

(= *Polygonum lapathifolium* L. subsp. *maculatum* (Gray) Dyer & Trimen,
= *Polygonum lapathifolium* L. var. *maculatum* Dyer & Trimen)

Annual herb, up to 1 m high. Ocreae glabrous. Petiole and main vein on undersurface yellow strigose-hairy. Peduncles with stalked glands. *Flowers red, pink, white or greenish; September to May.* Waste places, along roadsides, rivers and streams. Native to Europe. *Germishuizen 1280.*

W S C N E

limbata (Meisn.) H. Hara

(= *Polygonum limbatum* Meisn.,
= *Polygonum schinzii* C.H. Wright)

Perennial herb, up to 1,2 m high. Ocreae with spreading green leaf-like limb. *Flowers pink; September to May.* Vleis and marshy areas, in ditches, edges of dams, in water. *Germishuizen 3700.*

W S C N E

nepalensis (Meisn.) H. Gross*

(= *Polygonum alatum* Buch.-Ham ex Spreng.,
= *Polygonum nepalense* Meisn.)

Annual herb, up to 500 mm tall. Inflorescence a 5–12-flowered, long-stalked umbel. *Flowers white; December to March.* Along rivers and streams. Native to tropical Africa and Asia. *Scheepers 1130.*

W S C N E

senegalensis (Meisn.) Soják forma *senegalensis*

(= *Polygonum senegalense* Meisn. subsp. *senegalense*)

Perennial herb, up to 3 m high, glabrous or nearly so. Perianth glandular punctate. Nut lenticular, nut face concave. *Flowers rose-pink, greenish or white; September to April.* Banks of rivers and streams, on dam edges, furrows. *Germishuizen 1169.*

W S C N E

senegalensis (Meisn.) Soják forma *albotomentosa*

(R.A. Graham) K.L. Wilson

(= *Polygonum senegalense* Meisn. forma *albotomentosum* R.A. Graham,
= *Polygonum senegalense* Meisn. subsp. *albotomentosum* (R.A. Graham) Germish.)

Perennial herb, up to 1 m high, thickly covered with white tomentum. *Flowers white, greenish or pink; September to March.* Banks of rivers and streams, dam edges. *Germishuizen 1337.*

W S C N E

serrulata (Lag.) Webb & Moq.

(= *Polygonum salicifolium* Brouss. ex Willd.,
= *Polygonum serrulatum* Lag.)

Annual herb, up to 400 mm tall. Ocreae fringed with rigid bristles. Inflorescence with a zigzag axis. *Flowers purple, deep pink to pale pink; October to May.* Banks of rivers and streams, moist areas, vleis and marshy areas. *Germishuizen 3824.*

W S C N E

Polygonum L. (s. Afr.: 7 spp.)

2201000

Graham. 1958. F.T.E.A. Polygonaceae: 14.

Henderson & Anderson. 1966. Common weeds in South Africa: 82–85.
Germishuizen. Pers. comm.

aviculare L.*

Decumbent to prostrate herb. Internodes of main stem longer than 15 mm, if shorter then leaves always wider than 4 mm. Nut trigonous, matt. *Flowers pink, white or greenish; October to April.* Roadsides, on disturbed soils, lawns, waste ground. Native to Europe and Asia. *Germishuizen 1265.*

W S C N E

hystriculum J. Schust.

Herb, up to 0,8 m high. Ochrea and main vein of undersurface with strigose hairs. *Flowers pink to pinkish white; December to April.* Road verges, sides of dams, dry pans, streambanks. *Retief 1849.*

W S C N E

meisnerianum Cham. & Schltdl.

Herb, up to 500 mm tall. Glands on peduncles. *Flowers pink; January to April.* Edges of rivers, in water. *Germishuizen 1377.*

W S C N E

plebeium R. Br.

Prostrate herb. Internodes of main stem usually shorter than 12 mm. Leaves narrower than 3 mm. Nut trigonous, shiny. *Flowers white or pink; October to May.* Riverbeds, on drying mud and turf flats, besides pans. *Germishuizen 3672.*

W S C N E

Rumex L. (s. Afr.: 18 spp.)

2195000

Rechinger. 1954. Bot. Notiser, Suppl. 3: 3–114.

Graham. 1958. F.T.E.A. Polygonaceae: 5.

Rechinger. 1984. Nuytsia 5,1: 75.

acetosella L. subsp. *angiocarpus* (Murb.) Murb.*

(= *R. angiocarpus* Murb.)

Perennial herb, up to 500 mm tall. Ocreae silvery hyaline, lacerating. Fruit valves small, not longer than nut. *Flowers red; October to March.* Grassland, disturbed areas. Native to Europe and Asia. *Germishuizen 3468.*

W S C N E

bequaertii De Wild.

(= *R. bequaertii* De Wild. var. *quarrei* (De Wild.) Robyns,
= *R. quarrei* De Wild.)

Perennial herb, up to 1,5 m high. Leaves 7–8 times longer than wide, segments small. Inner perianth segments with 5 or more hooked teeth on each side. *Flowers yellow or greenish; October to January.* Grassland, bushveld and riverbanks. *Balsinhas 2791.*

W S C N E

brownii Campd.*

Perennial herb, up to 0,8 m high. Leaves lobed at base. Fewer than 5 hooked teeth on each side of perianth segments. Fruit valves with a hooked tip. *Flowers pale orange; November.* Grassland, disturbed areas. Native to Australia, New Zealand, New Guinea and Java. *Turner 1208.*

W S C N E

conglomeratus Murb.*

Perennial herb, up to 0,8 m high. Inflorescence an open panicle with flower whorls subtended by a leaf. Callosity large, covering large part of perianth segment. *Flowers white or greenish; November to January.* Grassland, disturbed areas, along watercourses, pastures. Native to Europe, the Mediterranean region and Asia. *Ubbink 1244.*

W S C N E

crispus L.*

Perennial herb, up to 1,5 m high. Leaves large, strap-shaped, crisped along margins. Inner perianth segment entire. Callosity small. *Flowers white or pale green; October to March.* Grassland, disturbed areas, along watercourses. Native to Europe and Asia. *Germishuizen 3514.*

W S C N E

dregeanus Meisn. subsp. **montanus** B.L. Burt

Annual herb, up to 1 m high. Leaves lanceolate-hastate from truncate base. Fruit valves 5–7 × 5–7 mm. Basal callus retrorse. *Flowers green; October to February.* Grassland, among rocks, alongside streams. *Drews 121.*

W S C N E

lanceolatus Thunb.

(= *R. ecklonianus* Meisn.,
= *R. linearis* Campd.)

Perennial herb, up to 500 mm tall. Only lower flower whorls or none subtended by a leaf. Panicle ± condensed. *Flowers green; October to March.* Grassland, moist areas, in vleis, along rivers and dams. *Germishuizen 2855.*

W S C N E

rhodesius Rech. f.

Perennial herb, up to 0,6 m high. Flower whorls not subtended by a leaf. Inner perianth segments toothed with straight teeth, usually more than 4 per margin. *Flowers white or greenish; October to December.* Grassland, disturbed areas, along watercourses, pastures. *Germishuizen 3442.*

W S C N E

sagittatus Thunb.

(= *R. burchellii* Campd.,
= *R. luxurians* L.f.)

Perennial climber. Leaves sagittate. Fruit valves suborbicular, reddish tinged. *Flowers green, pink or red; September to March.* Grassland, bushveld, forest margins, streambanks. *Germishuizen 3836.*

W S C N E

steudelii Hochst. ex A. Rich.

Perennial herb, up to 1,2 m high. Leaves 3–5 times longer than wide, segments large. Inner perianth segments with 5 or more hooked teeth on each side. *Flowers greenish or yellowish; October to January.* Grassland, bushveld, riverbanks. *Burt Davy 4179.*

W S C N E

woodii N.E. Br.

(= *R. natalensis* Dammer ex J.M. Wood)

Herb, up to 0,7 m high. Leaves lanceolate, narrowed to base. *Flowers green with deep red to purple edges; October to February.* Grassland, rocky slopes, disturbed areas. *Toelken 1104.*

W S C N E

PORTULACACEAE

Herbs with succulent leaves. Leaves alternate or opposite, without stipules or with papery or hairy stipular appendages. Flowers regular. Sepals 2. Petals 4–6, free. Stamens as many as and opposite petals, free. Ovary superior or half inferior, 1-locular; style with 3–8 stigmatic lobes. Fruit a capsule, opening by means of valves or a lid.

Key after Dyer, Gen. 1: 138 (1975).

- 1a Sepals adnate to base of ovary; ovary half inferior; seed dispersal by circumscissile split; seeds many **Portulaca**
 1b Sepals free; ovary superior; fruit indehiscent or splitting into valves 2
 2a Ovules solitary **Portulacaria**
 2b Ovules many 3

- 3a Stipules absent; flowers in racemose or paniced cymes, rarely solitary *Talinum*
 3b Stipules present; flowers in simple racemes, sometimes on long peduncles *Anacampseros*

Anacampseros L. (s. Afr.: 44 spp.) 2412000

Jacobsen. 1960. Succ. pl. and their fam. 1: 216–225.

Wild. 1961. F.Z. 1: 367–369.

Podlech. 1967. F.S.W.A. 29: 2–7.

filamentosa (Haw.) Sims var. *filamentosa*

(= *Portulaca filamentosa* Haw.)

Small perennial herb, up to 50 mm tall. Leaves ovate to spherical, thick, $\pm$ truncate at apex, coated with fine white threads, bristly hairs long, numerous, curled. *Flowers pink; October to January*. Granite outcrops. *Leendertz sub TRV 11974*.

W S C N E

rhodesica N.E. Br.

Succulent perennial herb, up to 20 mm tall. Leaves spirally arranged, small, half hidden under stipules. Stipules submembranous, scaly and silvery. *Flowers pale pink, apricot or white*. In rock crevices. *Bredenkamp & Van Vuuren 232*.

W S C N E

starkiana Poelln.

Perennial herb with branches 20 mm long. Leaves obovate to wedge-shaped. Tomentum rather weakly developed. Stipule hairs present in few numbers, somewhat longer than leaves. *Flowers white*. No specimens in PRE.

W S C N E

subnuda Poelln. subsp. *subnuda*

(= *A. lanigera* Burch.)

Succulent with branches 20 mm long. Young leaves hairy, older leaves $\pm$ bare. *Flowers white to rose; July to June*. Depressions and cracks in rocks. *Codd & Dyer 9224*.

W S C N E

subnuda Poelln. subsp. *lubbersii* (Bleck) M. Gerbaulet

Succulent, up to 10 mm tall. Stems low, tufted and rhizomatous. Leaves entirely glabrous, rugose. Bristles absent. *Flowers purplish pink; December*. Between rocks. No specimens in PRE.

W S C N E

Portulaca L. (s. Afr.: 9 spp.) 2421000

Wild. 1961. F.Z. 1: 363–367.

collina Dinter

Small, erect herb, up to 70 mm high. Stipules much longer than internodes, numerous, white. Leaves concealed by stipules. *Flowers yellow; October*. Bushveld. *Germishuizen 3063*.

W S C N E

foliosa Ker Gawl.

Robust annual or perennial herb with branches prostrate or suberect, up to 350 mm long. Leaves linear, cylindrical. Stipular hairs few, inconspicuous, up to 3 mm long. *Flowers yellow, orange or occasionally pink-tinged; January to February*. Dry places. *Lang sub TRV 31542*.

W S C N E

grandiflora Hook.

Succulent annual herb, up to 150 mm tall. Stigmas red. Filaments reddish purple, anthers yellow. *Flowers dark reddish pink; December to April*. Rocky hillsides. *Van Wyk 1399*.

W S C N E

hereroensis Schinz

Prostrate herb with branches up to 70 mm long. Stipular hairs fairly numerous, $\pm$ 2 mm long. Stamens 4. *Flowers purplish or white; January and February*. Rocky outcrops. *Pienaar 276*.

W S C N E

kermesina N.E. Br.

(= *P. crocodilorum* Poelln.)

Prostrate or erect herb, up to 200 mm tall. Leaves linear, cylindrical. Stipular hairs numerous, up to 7 mm long. *Flowers magenta; October to March*. Bushveld, grassland, old cultivated lands. *Germishuizen 3065*.

W S C N E

oleracea L.

(= *P. oleracea* L. subsp. *sylvestris* (DC.) Thell.,

= *P. oleracea* L. var. *opposita* Poelln.)

Glabrous, rather fleshy annual herb with spreading or prostrate branches. Leaves obovate-spathulate. Stipular hairs very few, inconspicuous and caducous, $\pm$ 1 mm long. *Flowers yellow; November to February*. Disturbed land. *Van der Schijff 3490*.

W S C N E

pilosa L.

Flat, creeping succulent. Stems pinkish with white hairs. Leaves fleshy, light green. *Flowers pink or crimson; October and January to April*. Roadsides, open woodland, red sandy soil. *Zambatis 1583*.

W S C N E

quadrifida L.

(= *P. walteriana* Poelln.)

Prostrate, succulent herb with branches up to 250 mm long. Leaves flattened, lanceolate-acuminate or elliptic to ovate. Stipular hairs not dilated. *Flowers deep pink, purple to red or yellow; November to March*. Bushveld, disturbed land. *Codd 10492*.

W S C N E

trianthemoides *Bremek.*

Erect, succulent herb, up to 150 mm tall. Leaves linear-oblong. Stipular hairs inconspicuous and caducous. *Flowers yellow; April.* Dry places. *Bremekamp & Schweickerdt 231.*

W S C N E

Portulacaria *Jacq.* (s. Afr.: 3 spp.) 2419000

Van Jaarsveld. 1984. JI S. Afr. Bot. 50: 393–399.

afra *Jacq.*

Succulent shrub or small tree, up to 5 m high. Leaves fleshy, obovate, sessile. Small flowers produced in profusion, in dense sprays at ends of short lateral branchlets. *Flowers pink to mauve; October and November.* Rocky hillsides. *Pole Evans 19645 H.*

W S C N E

Talinum *Adans.* (s. Afr.: 6 spp.) 2406000

Toelken. 1969. Bothalia 10, 1: 19–28.

arnotii *Hook. f.*

Semi-erect shrublet with branches up to 600 mm long. Leaves narrowly ovate to broadly elliptic. Inflorescence 1- or 2-(3-)flowered. Pedicel not thread-like. Seeds without ridges, papillose. *Flowers yellow; November.* Grassland, sandy to clayey soil. *Lessing 61.*

W S C N E

caffrum (*Thunb.*) *Eckl. & Zeyh.*

(= *T. esculentum* Dinter & G. Schellenb.)

Erect or decumbent herb with branches up to 400 mm long. Leaves linear to oblong. Inflorescence 1-flowered. Pedicel not thread-like. Seeds with concentric ridges perpendicular, elongate papillae between ridges. *Flowers yellow; September to February.* Grassland, on rocky outcrops. *Germishuizen 1004.*

W S C N E

crispatum *Dinter ex Poelln.*

Prostrate or decumbent herb with branches up to 400 mm long, dioecious. Leaf margin crisped, never revolute. *Flowers yellow; December.* Grassland, sandy soils. *Toelken 1283.*

W S C N E

portulacifolium (*Forssk.*) *Asch. ex Schweinf.*

(= *Orygia portulacifolia* Forssk.)

Shrub with annual branches up to 1 m high. Leaves obovate, obtuse or rounded at apex. Inflorescence terminal, paniculate. *Flowers pink or mauve; November to February.* Hillsides, rocky outcrops, in shade. *Bremekamp & Schweickerdt 281.*

W S C N E

tenuissimum *Dinter*

(= *T. dinteri* Poelln.,
= *T. transvaalense* Poelln.)

Semi-erect or decumbent herb with branches up to 300 mm long. Pedicel thread-like with 0 or 1 pair of bracteoles. Seeds 6–12(–15) per capsule. *Flowers yellow; January to February.* Grassland, sandy soil. *Lang sub TRV 32199.*

W S C N E

PRIMULACEAE

Herbs, prostrate or erect, sometimes with soft or wiry flowering branches. Leaves alternate, opposite or whorled, entire. Flowers bisexual, usually regular. Calyx 5-fid or -partite, free or ± adnate to ovary. Corolla with tube subcylindrical or campanulate, lobes 4- or 5-fid or -partite or corolla hypocrateriform. Stamens as many as corolla lobes. Ovary superior or half inferior, 1-locular. Fruit a capsule.

Key after Dyer in F.S.A. 26: 9 (1963).

- 1a Stamínodes present; ovary half inferior **Samolus**
- 1b Stamínodes usually absent; ovary superior 2
- 2a Inflorescence a raceme or panicle; filaments glabrous **Lysimachia**
- 2b Inflorescence reduced to solitary axillary flowers; filaments bearded **Anagallis**

Anagallis *L.* (s. Afr.: 4 spp.) 6338000

Dyer. 1963. F.S.A. 26: 13–15.

arvensis *L.**

Erect or ascending annual herb, up to 100 mm tall, much-branched from base. Leaves opposite or verticillate, ovate, sessile and almost stem-clasping. Corolla lobes usually fringed with glands. *Flowers red or blue;*

July to October. Weed, in moist situations. Native to Europe and Asia. *Van Wyk & Theron 4581.*

W S C N E

huttonii *Harv.*

Prostrate or decumbent perennial herb, eventually rooting at nodes. Leaves opposite, obovate to orbicular, petiolate. Corolla not fringed with glands. *Flowers*

white or pale pink; November to January. In damp places. *Bruce & Kies* 76.

W S C N E

pumila Sw. var. pumila

Erect annual herb, 30–100 mm tall. Stems subterete or angled, scarcely winged. Leaves obovate or spatulate, somewhat fleshy, petiolate, mostly alternate. *Flowers very shortly pedicellate, corolla not fringed with glands, white; November to January and in May.* In wet (clay) soil next to streams or dams. *Gilliland* 26977.

W S C N E

Lysimachia L. (s. Afr.: 2 spp.) 6330000
Dyer. 1963. F.S.A. 26: 11–13.

ruhmeriana Vatke

Perennial herb, up to 1 m high. Corolla rarely longer than 5 mm. Stamens included within corolla on very

short filaments. *Flowers dirty white; December to March.* Mainly in cool mountainous situations. *Gerstner* 5751.

W S C N E

Samolus L. (s. Afr.: 2 spp.) 6328000
Dyer. 1963. F.S.A. 26: 10–11.

valerandi L.

Biennial or perennial herb, 0.2–0.6 m high. Cauline leaves somewhat small but not differing much from basal ones. Inflorescence usually much-branched. Pedicels with a bracteole in the middle. Corolla minute. *Flowers white; September to May.* In moist situations. *Barnard* 329.

W S C N E

PROTEACEAE

Trees or shrubs, sometimes prostrate. Leaves alternate, leathery, without stipules. Flowers irregular, in heads, spikes or racemes, sometimes surrounded by showy involucre bracts. Sepals 4, petal-like. Petals absent or reduced to scales. Stamens 4, opposite and fused to sepals, often with only anthers free or with very short filaments. Ovary superior, with long style. Fruit a nut, drupe or follicle.

Key after Dyer, Gen. 1: 41 (1975).

- 1a Inflorescence a lax spike **Faurea**
- 1b Inflorescence a 3- to many-flowered capitulum **2**
- 2a Involucre bracts large, conspicuous, usually brightly coloured **Protea**
- 2b Involucre bracts small, green or brown, cartilaginous, papery or woody, not brightly coloured **Leucospermum**

Faurea Harv. (s. Afr.: 5 spp.) 2034000
Phillips & Stapf. 1912. F.C. 5,1: 639–643.
Coates Palgrave. 1977. Trees of southern Africa: 125–128.

galpinii E. Phillips

Shrub or small tree, up to 10 m high. Leaves lanceolate, 50–100 × 25 mm. Spike 50–70 mm long. Flower shortly stalked. *Flowers greenish white; October to April.* Montane grassland, forest margins and rocky hillsides. *Renny* 207.

W S C N E

macnaughtonii E. Phillips

Tall evergreen tree, up to 20 m high. Bark grey. Leaves broadly elliptic to obovate, 120 × 25–30 mm, glabrous. Spike up to 150 mm. *Flowers white or pale pink; February to April.* In forests and along forest margins. *Loock sub PRE* 52543.

W S C N E

saligna Harv.

Small to medium-sized tree, up to 10 m high. Leaves lanceolate, pinkish red when young, bright red in autumn, petiole rosy red, drooping. Flowers sessile, spike 100–150 mm. *Flowers greenish to creamy white; October to March.* Bushveld clumps on hillsides or in open woodland. *Van Rooyen* 2581.

W S C N E

speciosa (Welw.) Welw.

Small tree, up to 7 m high. Leaves broadly ovate, tomentose, subglabrous when quite old. Spike 200 mm long. *Flowers dull white, yellow to brownish pink; July to June.* Woodland and grassland, rocky slopes. *Codd* 7850.

W S C N E

Leucospermum R. Br. (s. Afr.: 47 spp.) 2036000
Rourke. 1972. Jl S. Afr. Bot., Suppl. 8.

gerrardii Stapf

Dwarf, soboliferous shrub, up to 400 mm tall. Leaves linear to oblanceolate, slightly falcate, with prominently raised, reticulate and parallel veins on surface. *Perianth yellow, on opening becoming orange to scarlet. Flowering September to October and February to March.* Montane grassland. Rourke 1443.

W	S	C	N	E
---	---	---	---	---

saxosum S. Moore

Erect shrub, up to 2 m high. Leaves oblanceolate, cuneate to elliptic, smooth, lacking prominently raised veins on surface, very attenuate to petiolate at base. Perianth tube infundibuliform. *Perianth yellow-orange, becoming crimson with age. Flowering March to June.* Montane grassland. Vorster 1945.

W	S	C	N	E
---	---	---	---	---

Protea L. (s. Afr.: 83 spp.)

2035000

Rourke. 1980. The proteas of southern Africa: 50–165.

caffra Meisn. subsp. **caffra**

(= *P. bolusii* E. Phillips,
= *P. multibracteata* E. Phillips,
= *P. rhodantha* Hook. f.)

Erect shrub or small tree, up to 8 m high. Perianth glabrous to sparsely villous on abaxial limbs and apices with tawny to whitish indumentum. *Involucral bracts pink or carmine with green at base. Flowering July to June.* Rocky slopes in grassland. Rourke 1473.

W	S	C	N	E
---	---	---	---	---

comptonii Beard

Tree, up to 8 m high. Leaves glabrous, thick and very heavily coriaceous. *Involucral bracts greenish white. Perianth white, limbs thickly villous. Flowering May to October.* Steep rocky hillsides in grassland. De Winter 9440.

W	S	C	N	E
---	---	---	---	---

curvata N.E. Br.

Small, erect tree, up to 8 m high. Leaves narrowly oblong-oblanceolate, subfalcate to falcate. *Involucral bracts glabrous proximally sericeous, deep red to black. Perianth straight, pinkish red. Flowering May.* Bushveld, hillsides. Fourie 1800.

W	S	C	N	E
---	---	---	---	---

gaguedi J.F. Gmel.

Erect, spreading shrub or small, gnarled tree, up to 3 m tall. *Involucral bracts covered with fine, densely adpressed, silvery, sericeous indumentum. Perianth densely whitish pubescent. Flowering August to March.* Bushveld, woodland and grassland, rocky slopes. Venter 8812.

W	S	C	N	E
---	---	---	---	---

laetans L.E. Davidson

Slender tree, up to 5 m high. Multistemmed at base. *Involucral bracts deep carmine, densely sericeous with fine silvery or tawny, ferruginous indumentum. Perianth with claws very densely velutinous to tomentose with tawny to ferruginous indumentum. Flowering May.* Grassland, rocky hillsides. Davidson 2681.

W	S	C	N	E
---	---	---	---	---

parvula Beard

Low, procumbent shrublet, up to 160 mm tall. Perianth glabrous to ferruginously villous at apices. *Involucral bracts whitish green to pink, glabrous but occasionally with minutely ciliate margins. Flowering December to January.* Grassland. Devenish 1099.

W	S	C	N	E
---	---	---	---	---

roupelliae Meisn. subsp. **roupelliae**

(= *P. incana* Hort. ex Meisn.)

Small, erect tree, up to 8 m high. *Involucral bracts creamy yellow to deep pink, inner bracts spatulate. Perianth awns pale pink to deep purple, black, rusty red or brown. Flowering July to January.* Woodland, rocky slopes and ridges. Codd 7872.

W	S	C	N	E
---	---	---	---	---

roupelliae Meisn. subsp. **hamiltonii** Beard ex Rourke

Procumbent, much-branched shrublet, up to 300 mm tall. Stems sprawling horizontally, highly branched, radiating from single main trunk, ultimately forming a compact tufted mat. *Involucral bracts greenish yellow, occasionally pink. Flowering November to January.* Bare eroded patches of heavily leached clay. Rourke 1467.

W	S	C	N	E
---	---	---	---	---

rubropilosa Beard

Gnarled shrub or small tree, up to 5 m high. *Involucral bracts densely velutinous with thick brown ferruginous indumentum. Perianth limbs villous with white indumentum. Flowering August to February.* Open woodland. Thompson 828.

W	S	C	N	E
---	---	---	---	---

simplex E. Phillips

(= *P. dodii* E. Phillips,
= *P. flanaganii* E. Phillips,
= *P. transvaalensis* E. Phillips)

Multistemmed shrublet, up to 1 m high. Leaves linear to narrowly oblong. *Involucral bracts greenish cream through cream, flushed with pink to clear pink and even deep uniform carmine. Perianth with white or ferruginous indumentum. Flowering March to May.* Grassland. Walters 146.

W	S	C	N	E
---	---	---	---	---

subvestita N.E. Br.

(= *P. lacticolor* Salisb. var. *angustata* E. Phillips,
= *P. lacticolor* Salisb. var. *orientalis* (Sim) E. Phillips)

Large, upright, bushy shrub or small tree, up to 5 m high. Perianth with apices prominently crinate with silky wavy hairs. *Involucral bracts carmine, pink or*

creamy white. Innermost bracts with tips bending outwards. Flowering January to February. Grassland. Du Plessis 192.

W S C N E

welwitschii Engl.

Multistemmed shrub or small tree, up to 1,5 m high, tending to produce multiple flowerheads. Involucral

bracts sparsely to densely sericeous with whitish to rusty brown indumentum. Perianth with limbs very densely hirsute with cream to rusty brown indumentum. Flowering November to March. Grassland. Meeuse 9052.

W S C N E

PTAEROXYLACEAE

Trees or shrubs, dioecious. Leaves alternate or subopposite, pinnate, with leaflets asymmetrical and opposite. Flowers small, in axillary panicles. Calyx 4-partite. Petals 4. Disc fleshy. Stamens 4, inserted at base of disc. Ovary inserted on disc, 2-locular; styles 2, stigmas capitate. Fruit an oblong, compressed capsule, apically notched.

Ptaeroxylon Eckl. & Zeyh. (s. Afr.: 1 sp.) 4157000

White & Styles. 1963. F.Z. 2: 548-550.

obliquum (Thunb.) Radlk.

(= P. utile Eckl. & Zeyh.)

Shrub or tree, usually not taller than 15 m. Leaflets in 3-7 pairs, up to 50 x 24 mm, very asymmetric. Fruit a

capsule, splitting into 2 persistent, bilobed valves, chestnut-brown with conspicuous veins. Flowers pale yellow; August to November. Bushland, forest. Venda Herb. 767.

W S C N E

RANUNCULACEAE

Herbs or ± woody climbers. Leaves alternate or opposite, often in basal rosette, compound with bases forming a sheath. Flowers regular, with parts typically arranged in spirals along a rather elongated or globular receptacle. Sepals 5, often petal-like (petals then absent). Petals (if present) 5, free, usually with nectar-bearing stalk. Stamens numerous, free. Ovary comprising numerous free carpels, superior. Fruit a cluster of achenes, sometimes with plumed styles.

Key after Dyer, Gen. 1: 153 (1975).

- 1a Leaves opposite; carpels with feathery tails 2
- 1b Leaves radical or alternate 3
- 2a Twining or scrambling plant, becoming woody with age; sepals valvate Clematis
- 2b Erect subshrub; sepals ± imbricate Clematopsis
- 3a Sepals petaloid, small; inflorescence paniculate; petals absent Thalictrum
- 3b Sepals and petals present; inflorescence usually several- to many-flowered 4
- 4a Petals with nectary; achenes dry Ranunculus
- 4b Petals without nectary; carpels becoming fleshy or pulpy on maturity Knowltonia

Clematis L. (s. Afr.: 4 spp.)

2542000

Burt Davy. 1926. Fl. Transv. 1: 111.

Exell & Milne-Redhead. 1960. F.Z. 1: 89-92.

brachiata Thunb.

(= C. brachiata Thunb. var. burkei Burt Davy,
= C. thunbergii Steud.)

Vigorous climber. Leaves usually once divided. Anthers linear, 1,5-2,5 mm long. Flowers white; January to April. Kloofs, forest margins, hillsides. Coetzee 731; Bredenkamp 675.

W S C N E

oweniae Harv.

Climber. Leaves at least twice divided and ultimate divisions usually deeply incised. Anthers ellipsoid, 1,0(-1,5) mm long. Flowers white; March to April. Grassland, hillsides. Joffe 232; Germishuizen 225.

W S C N E

stewartiae Burt Davy

Climber. Leaflets ± 45 x 30 mm, ovate, cordate at base, not lobed, silvery pubescent rather than fuscous. Flower buds very obtuse, oblong to elliptic. Flowers white with yellow centre. Grassy slopes and edges of thick bush. No specimens in PRE.

W S C N E

Clematopsis *Bojer ex Hutch.* (s. Afr.):

1 sp.)

2542010

Exell & Milne-Redhead. 1960. F.Z. 1: 94.
 Brummitt. 1976. Kew Bull. 31: 160.

scabiosifolia (DC.) Hutch. subsp. **stanleyi** (Hook.) Brummitt
(= *Clenatis stanleyi* Hook.)

Shrub, up to 1 m tall, with greyish silvery pubescence. Flowers terminal, drooping. Achenes in heads up to 100 mm in diameter, bearded. *Flowers white to deep pink; December to March.* Grassland, rocky ledges. Schlieben 9190.

W S C N E

Knowltonia *Salisb.* (s. Afr.: 8 spp.) 2541010

Rasmussen. 1979. Opera Bot. 53: 16–39.

transvaalensis Szyszyl. var. **transvaalensis**

(= *K. multiflora* Burt Davy,
 = *K. transvaalensis* Szyszyl.)

Herb with woody rootstock. Leaf margin with comose, extrorse teeth, length/breadth ratio of leaflets and leaf lobes not exceeding 7/1. Flowering stems up to 1 m high. *Flowers white; October to January.* Grassland, often flowering in burnt areas, vleis. Acocks & Hafström 484.

W S C N E

transvaalensis Szyszyl. var. **filifolia** H. Rasm.

Herb with woody rootstock. Leaf margin almost devoid of teeth, length/breadth ratio of leaf lobes 10/1 to 17/1. Flowering stems up to 1 m high. *Flowers white; October.* Grassland. Prosser 1510.

W S C N E

transvaalensis Szyszyl. var. **pottiana** (Burt Davy) H. Rasm.
(= *K. canescens* Szyszyl. var. *pottiana* Burt Davy)

Herb with woody rootstock. Leaf margin not ciliate, not or slightly toothed, lateral segments of leaves more complex than median ones. Flowering stems up to 1 m high. *Flowers white; October to February.* Grassland. Galpin 14311.

W S C N E

Ranunculus *L.* (s. Afr.: 6 spp.) 2546000

Exell & Milne-Redhead. 1960. F.Z. 1: 97–101.
 Toelken. 1967. Flower. Pl. Afr. 38: t. 1508.

baurii MacOwan

(= *R. cooperi* Oliv.)

Perennial herb up to 0,6 m high. Leaves radical, peltate, lamina circular, serrate with red cartilaginous margin

and gland at tip of serrations. Fruits markedly ridged. *Flowers yellow; October to December.* Vleis, riverbanks. Toelken 1106.

W S C N E

meyeri Harv.

(= *R. meyeri* Harv. var. *transvaalensis* Szyszyl.)

Mat-forming herb, up to 150 mm tall, creeping by runners. Leaves suborbicular-cordate with crenate margins, radical leaves on long petioles. *Flowers yellow; September to February.* Vleis. Repton 3430.

W S C N E

multifidus Forssk.

(= *R. pinnatus* Poir.,
 = *R. pubescens* Thunb.)

Robust, erect herb, up to 1 m tall. Basal leaves bi- or tripinnate, pubescent. Achenes ± 40–60 in spherical to slightly elongated head. *Flowers yellow; September to February.* Forest, river and stream banks, vleis. Hanekom 1992.

W S C N E

trichophyllus Chaix subsp. **drouetii** (Schultz) A.R.

Clapham

Aquatic herb, submerged except for flowers, appearing above water. Leaves filiform. *Flowers yellow or white; October to January.* Rivers. Leendertz 3892.

W S C N E

Thalictrum *L.* (s. Afr.: 2 spp.)

2548000

Exell & Milne-Redhead. 1960. F.Z. 1: 96.

minus *L.*

(= *T. caffrum* Eckl. & Zeyh.)

Herb, up to 2 m high. Terminal leaflet cuneate at base, apex acute, nerves on lower surface conspicuous, panicles much-branched. Carpels 6–8, strongly ribbed. *Flowers yellow; November to January.* River and stream banks. Leendertz sub TRV 10823.

W S C N E

rhynchocarpum Dill. & A. Rich.

(= *T. innitens* B. Boivin)

Perennial herb, up to 2,5 m high. Terminal leaflet 3-lobed in upper part, base rounded, apex cuspidate. Inflorescence lax. Carpels usually 1, ribbed. *Flowers green to purplish; January to February.* Forest margins. Jacobsen 4495.

W S C N E

RESEDACEAE

Herbs or shrubs. Leaves alternate or fasciculate, simple or variously dissected. Flowers zygomorphic, bisexual, subtended by a bract. Calyx 5- or 6-partite. Petals 2–6, free or partly fused. Disc present or not developed. Stamens 3–40 or more. Ovary of 3–5 connate carpels, superior. Fruit usually an indehiscent capsule open at top.

Oligomeris Cambess. (s. Afr.: 3 spp.) 3126000

Leistner. 1970. F.S.A. 13: 179–184.

dregeana (Müll. Arg.) Müll. Arg.(= *Reseda dregeana* Presl,= *Resedella dregeana* Müll. Arg.)Perennial herb, up to 500 mm tall. Bracts subtending adult flowers longer than flowers. Petals $\pm$ as long as

sepals. Flowers white; July to June. Open or disturbed vegetation. Scheepers 1447.

W S C N E

RHAMNACEAE

Trees or shrubs, rarely herbs, erect or scandent. Leaves alternate, with stipules. Flowers small, regular, usually white or greenish; disc usually present, nectar-secreting. Petals 5, free, often small and reduced. Stamens 5, opposite to and often embraced by petals. Ovary superior, sometimes sunken into disc, or inferior. Fruit a drupe.

Key after Dyer, Gen. 1: 347 (1975).

- 1a Climber with tendrils; leaves $\pm$ ovate-cordate; fruit a capsule; flower axillary, solitary **Helinus**
- 1b Small trees, shrubs or undershrubs 2
- 2a Fruit a capsule; disc evident; flowers in racemes, spikes or heads, rarely solitary; style simple **Phyllica**
- 2b Fruit a fleshy or dry drupe 3
- 3a Leaves alternate 4
- 3b Leaves opposite or approximate in pairs 6
- 4a Leaves palmately veined **Ziziphus**
- 4b Leaves pinnately veined 5
- 5a Leaves with entire or remotely toothed margins **Berchemia**
- 5b Leaves finely toothed **Rhamnus**
- 6a Inflorescence a short, axillary umbel; spines usually present **Scutia**
- 6b Inflorescence an axillary raceme or cyme; spines absent **Rhamnus**

Berchemia Neck. ex DC. (s. Afr.:

2 spp.)

4868000

Drummond. 1966. F.Z. 2.2: 424–427.

discolor (Klotzsch) Hemsl.(= *Phyllogeiton discolor* (Klotzsch) Herzog)

Tree, up to 20 m high. Pedicels short and stout, 9 mm long in fruit. Lamina ovate or obovate-elliptic, 50–110 $\times$ 30–60 mm. Ovary immersed in disc. Drupe yellow, ellipsoid, up to 20 $\times$ 8 mm. Flowers light yellow; November to December. Dry woodland, riverbanks. Venter 7214.

W S C N E

zeyheri (Sond.) Grubov(= *Phyllogeiton zeyheri* (Sond.) Suess.,= *Rhamnus zeyheri* Sond.)

Tree, up to 8 m high. Lamina elliptic to ovate, 12–40 $\times$ 6–25 mm, glabrous, shiny, discolorous. Pedicels long and slender, 4–14 mm long. Ovary free from disc. Flowers yellowish green; October to December. Open woodland, riverine fringe forest. Buitendag 711.

W S C N E

Helinus E. Mey. ex Endl. (s. Afr.:

2 spp.)

4905000

Drummond. 1966. F.Z. 2.2: 435–438.

integrifolius (Lam.) Kuntze(= *H. ovatus* E. Mey. ex Sond.,= *H. scandens* (Eckl. & Zeyh.) A. Rich.)

Climbing shrub up to $\pm$ 6 m high. Branchlets with coiled tendrils. Leaves petiolate, lamina ovate to broadly ovate or circular, 15–35 mm long. Capsule obovoid, glabrous. Flowers greenish yellow; November to March. Woodland, forest, grassland. Venter 1751.

W S C N E

spartioides (Engl.) Schinz ex Engl.

Shrublet, up to 1 m high. Branchlets virgate. Leaves reflexed, narrowly ovate, 20–40 $\times$ 4–5 mm, petiolate. Inflorescence 1–3-flowered. Petals 2 mm long. Disc 5-lobed, covering ovary. Stamens 2 mm long, inserted at edge of disc. Fruit 6 mm in diameter, obovoid. Flowers yellow; December to April. Grassland, scattered bush groups. Brueckner 1169.

W S C N E

Phyllica L. (s. Afr.: 145 spp.)

4886000

Pillans. 1942. Jl S. Afr. Bot. 8, 1: 1–164.

paniculata Willd.

Much-branched shrub or tree, up to 5 m high. Leaves crowded and overlapping, lamina 10–15 $\times$ 3 mm, mar-

gin entire, revolute, concealing less than half of lower surface. Flowers in panicate thyrses. *Flowers creamy white; November to May*. Woodland, rocky situations. *Codd & Dyer 9072*.

W S C N E

Rhamnus L. (s. Afr.: 1 sp.) 4875000

Drummond. 1966. F.Z. 2,2: 427–428.
Retief. 1991. Flower. Pl. Afr. 51: t. 2030.

prinoides L'Hér.

Shrub or small tree, sometimes scrambling, up to 5 m high. Leaves penninerved, usually crenate or serrate, lamina elliptic or elliptic-oblong, 30–100 × 15–40 mm. Fruit 2–4-locular, a fleshy drupe. *Flowers 5-merous; green; November to June*. Riverbanks, forest fringes. *Retief 1307*.

W S C N E

Scutia (Comm. ex DC.) Brongn.

(s. Afr.: 1 sp.)

4874000

Drummond. 1966. F.Z. 2,2: 428–430.

myrtina (Burm. f.) Kurz

(= *S. commersonii* Brongn.,
= *Rhamnus myrtina* Burm. f.)

Shrub or tree, usually somewhat scandent, up to 4 m high, armed with axillary spines. Leaves penninerved, lamina ovate or elliptic, apex acute to rounded or retuse, apiculate. Fruit obovoid to spherical, up to 8 mm in diameter, glabrous. *Flowers green; December to February*. Forest, woodland. *Obermeyer sub TRV 29316*.

W S C N E

Ziziphus Mill. (s. Afr.: 5 spp.)

4861000

Drummond. 1966. F.Z. 2,2: 419–424.

mucronata Willd. subsp. mucronata

Shrub or tree, up to 12 m high. Leaves 3–5-nerved from base, pubescent along nerves beneath, more rarely glabrous, leaf bases markedly asymmetric. Stipules usually spinescent, 1 hooked and 1 straight at each node. *Flowers greenish yellow; November to February*. Open woodland. *Steyn 728*.

W S C N E

rivularis Codd

Shrub or small tree, up to 7 m high. Leaf lamina narrowly elliptic-ovate to elliptic-ovate, upper surface glossy, very prominently 3-nerved below from base to apex with prominent reticulate venation on both sides, margin serrulate. Unarmed. *Flowers yellowish green; November to December*. Banks of streams, rocky watercourses. *Codd 4823*.

W S C N E

zeyheriana Sond.

(= *Z. helvola* Sond.)

Shrublet, up to 0,6 m high. Stems annual from creeping rhizome, branches with paired, stipular spines. Lamina ovate to broadly ovate, 20–50 × 10–40 mm, margin serrulate. *Flowers yellowish green; October to February*. Grassland and woodland. *Hanekom 1505*.

W S C N E

RHIZOPHORACEAE

Trees or shrubs. Leaves mostly opposite, with caducous stipules. Flowers regular. Calyx 4–7-lobed; tube ± campanulate, persistent in fruit. Petals 4–7, as long as calyx lobes. Stamens 8–40. Ovary superior, 2–4-locular. Fruit a capsule, sometimes a berry or drupe.

Cassipourea Aubl. (s. Afr.: 5 spp.) 5529000

Alston. 1925. Kew Bull. 1925: 257–258.
Torre & Gonçalves. 1978. F.Z. 4: 89–96.

gerrardii (Schinz) Alston

Tree or shrub, up to 25 m high. Inflorescence 1–4(–6)-flowered. Leaves oblanceolate, lanceolate, narrowly to

broadly elliptic, oblong, ovate or obovate; concolorous, margins serrate. *Flowers yellowish green; August to January*. Moist forest, mixed forest, thickets, rain-forest and upland dry forest. *Van der Schijff 6206*.

W S C N E

ROSACEAE

Herbs, shrubs or trees, prostrate, scandent or erect. Leaves alternate, with stipules. Flowers regular; perianth and stamens united at base into a cup (hypanthium). Petals 5, free. Stamens numerous, free. Ovary inferior or superior; carpels free or variously united; styles free. Fruit fleshy or dry.

Key after Valentine & Chater in Fl. Europ. 2: 3 (1968) p.p.

1a	Herb	2
1b	Tree or shrub	8
2a	Petals 0	3
2b	Petals 4 or more	4
3a	Leaves simple or digitately divided	Alchemilla
3b	Leaves pinnate	Sanguisorba
4a	Sepals 4–6; epicalyx absent; flowers yellow; fruit with hooked bristles	Agrimonia
4b	Sepals 4 or 5; epicalyx segments 4 or 5	5
5a	Leaves pinnate	6
5b	Leaves ternate, digitate or digitately lobed	7
6a	Styles long, persistent	Geum
6b	Styles short, deciduous	Potentilla
7a	Epicalyx segments 3-toothed at apex; petals yellow	Duchesnea
7b	Epicalyx segments not toothed at apex; petals white	Fragaria
8a	(1) Leaves simple	9
8b	Leaves compound	11
9a	Tree	Prunus
9b	Shrub	10
10a	Leaves ovate, margin entire	Cotoneaster
10b	Leaves elliptic, margin crenate-dentate; shrub spiny	Pyracantha
11a	An armed shrub	12
11b	An unarmed shrub or small tree	13
12a	Carpels and fruit exposed on hypanthium	Rubus
12b	Carpels enclosed in hypanthium	Rosa
13a	Leaves imparipinnate, leaflets incised, petiolate	Leucosidea
13b	Leaves 1–3-foliate, linear, margins entire, sessile or shortly petiolate	Cliffortia

Agrimonia L. (s. Afr.: 2 spp.) 3376000

Henderson & Anderson. 1966. Common weeds in South Africa.: 166–167.

Bond & Goldblatt. 1984. Jl S.A. Bot., Suppl. 13: 386.

procera Walp.*

(= *A. odorata* Mill.)

Erect, perennial herb, up to 1,2 m high. Leaves pinnate, leaflets of different sizes. Flowers in elongated, bracteate terminal racemes. Fruits 8 mm long, basal part campanulate, ribbed, densely pubescent, crowned by hooked bristles. *Flowers bright yellow; December to May*. Grassland, streambanks, vleis. Native to Europe and Asia. *Brenan 14120*.

W S C N E

Alchemilla L. (s. Afr.: 15 spp.) 3375000

Harvey. 1862. F.C. 2: 291–292.

cryptantha Steud.

Prostrate herb, stoloniferous, with primary or secondary rosettes. Exterior segments of perianth larger than interior. Achenes numerous. *Flowers green; February*. Forest margins. *Brenan 14115*.

W S C N E

elongata Eckl. & Zeyh. var. elongata

(= *A. palmata* E. Mey.)

Prostrate herb. Stems adpressed pilose. Leaves glabrous above, pilose below, lobes incised to half of the radius,

petioles 15–30 mm long. *Flowers green; November*. Streambanks, marsh areas. *Netshiungani 1327*.

W S C N E

kiwuensis Engl.

Prostrate herb. Leaves in rosettes or scattered along prostrate stem, leaves usually divided to more than half the radius of lamina. Inflorescence a shortly branched panicle of cymes. *Flowers light green; March*. Forest. *Scheepers 658*.

W S C N E

natalensis Engl.

Prostrate herb. Stems patently hirsute. Leaves glabrous on both sides or sericeous below, incised, lobes truncate, petioles 1–3 mm long. Style 1. *Flowers green; November*. Vleis. *Du Toit 69*.

W S C N E

rehmannii Engl.

Prostrate herb. Leaves usually 5-lobed, finely toothed, petioles and stems densely to thinly pilose with long spreading hairs. Stipule adnate to petiole. *Flowers greenish yellow; October to February*. Streambanks, damp places. *Meeuse 10079*.

W S C N E

woodii Kuntze

(= *A. wilmsii* Engl.)

Prostrate herb. Hairs on stem hirsute, patent. Leaf lobes 3, incised to up to two-thirds of the radius, upper

surface glabrescent, lower surface hirsute, petiole 1–12 mm long. Episepals minute. *Flowers yellow; November to January*. Riverbanks, margins of vleis. *Toelken 1119*.

W S C N E

Cliffortia L. (s. Afr.: 114 spp.) 3388000

Weimarck. 1934. Monograph of *Cliffortia*.
Weimarck. 1946. Bot. Notiser 4: 407–420.
Weimarck. 1948. Bot. Notiser 90: 168–203.
Weimarck. 1953. Bot. Notiser 106,1: 78–80.
Weimarck. 1959. Bot. Notiser 112,1: 73–79.

linearifolia Eckl. & Zeyh.

(= *C. ericifolia* L.f. var. *acutistipula* Kuntze)

Large shrub, up to 2 m high. Leaves 3-foliolate, midrib swollen and prominent, margins noticeably revolute, with no glandular hairs, leaflets linear to very narrowly lanceolate. *Flowers brownish white; November to March*. Riverbanks and streambanks, marshy grassland. *Theron 1550*.

W S C N E

nitidula (Engl.) R.E. & Th. Fr. subsp. **pilosa Weim.**

Shrub, up to 2 m high. Young twigs pilose. Leaves 3-foliolate, midrib not swollen, visible but not prominent, leaflets very narrow-ob lanceolate to linear. *Flowers pale green; September to December*. Streambanks. *Codd & Dyer 8988*.

W S C N E

repens Schltr.

(= *C. juniperina* L.f. var. *serrulata* Engl.,
= *C. natalensis* J.M. Wood)

Shrub, up to 2 m high. Leaves simple, glabrous, linear and occasionally falcate, apex acute, margin not revolute, midrib swollen and prominent, petiole absent. *Flowers pale green; October to April*. Grassland, streambanks. *Buitendag 827*.

W S C N E

serpyllifolia Cham. & Schltdl.

(= *C. polyphylla* Eckl. & Zeyh.)

Shrub, up to 4 m high. Leaves 3-foliolate, midrib swollen and prominent, leaflets oblanceolate to oblong to obovate. *Flowers green; July to June*. Streambanks. *Smuts 8*.

W S C N E

strobilifera Murray

(= *C. conoides* Sparrm.,
= *C. rogersii* Burt Davy)

Shrub, up to 4 m high. Leaves linear, lanceolate, 10–50 × 1–3(–5) mm, smooth-margined or occasionally serrulate, stem leaves losing their laminae at an early stage, only the wide, usually grey to greyish green vagina remaining, crowned by 2 stipules. Riverbanks and streambanks. *Van der Schijff 3175*.

W S C N E

Cotoneaster Medik. (s. Afr.: 2 spp.) 3333000

Bailey. 1977. Hortus Third: 323.

pannosus Franch.*

Semi-evergreen shrub, up to 3 m high. Branches spreading, drooping at the ends. Leaves ovate to elliptic, dull green, white-tomentose beneath. Fruits red, subglobose. *Flowers white; October*. Riverbanks, edges of dams. Native to China. *Duggan & Henderson 31*.

W S C N E

Duchesnea Sm. (s. Afr.: 1 sp.) 3355000

Tutin *et al.* 1968. Fl. Europ. 2: 48.

Bailey. 1977. Hortus Third: 403.

indica (Andrews) Focke*

Perennial herb with epigeal, rooting stolons. Epicalyx segments 3-toothed at apex. Leaves 3-foliolate, rather long-petiolate, leaflets obovate, crenate. Flowers solitary. *Flowers yellow; September to December*. Watercourses, in shade of trees. Native to India. *Mohle 144*.

W S C N E

Fragaria L. (s. Afr.: 1 sp.) 3354000

Tutin *et al.* 1968. Fl. Europ. 2: 47–48.

Bailey. 1977. Hortus Third: 484.

vesca L.*

Perennial herb with long, epigeal, rooting stolons. Leaves 3-foliolate in basal rosette. Pedicels appressed-pubescent. Achenes projecting, uniformly scattered over receptacle. *Flowers white; September*. Grassland. Native to Eurasia and North America. *Stalmans 167, Kluge 606*.

W S C N E

Geum L. (s. Afr.: 1 sp.) 3365000

Harvey. 1862. F.C. 2: 289.

capense Thunb.

Herb, up to 360 mm tall. Radical leaves unequally pinnatifid, terminal segment mostly larger than the rest, cauline leaves small or depauperate, trifid. *Flowers bright yellow; October to March*. Streambanks. *Devenish 147*.

W S C N E

Leucosidea Eckl. & Zeyh. (s. Afr.:

1 sp.)

3379000

Killick. 1969. Flower. Pl. Afr. 40: t. 1566.

sericea Eckl. & Zeyh.

Much-branched, very leafy shrub, up to 3 m high or sometimes a tree up to 10 m high. Bark reddish brown. Leaves imparipinnate, green or grey. Inflorescences with flowers densely aggregated in terminal racemes. *Flowers yellow; August to February.* Forest margins, riverbanks, hillsides. *Stalmans 138.*

W	S	C	N	E
---	---	---	---	---

Potentilla L. (s. Afr.: 2 spp.) 3356000

Valentine & Chater. 1968. *Fl. Europ.* 2: 36–47.

supina L.

(= *P. gariensis* E. Mey. ex Harv.)

Annual or short-lived perennial herb. Flowering stems up to 400 mm tall. Leaflets oblong or obovate, incisedentate. Petals 2.5–3.0 mm, shorter than sepals. *Flowers yellow. Leendertz sub TRV 10861.*

W	S	C	N	E
---	---	---	---	---

Prunus L. (s. Afr.: 2 spp.) 3396000

Kalkman. 1965. *Blumea* 13: 25.

Tutin *et al.* 1968. *Fl. Europ.* 2: 77–80.

africana (Hook. f.) Kalkman

(= *Pygeum africanum* Hook. f.)

Evergreen tree, up to 24 m high. Leaves simple, ovate to elliptic, dark green and glossy above, paler below, margin finely toothed, petiole pinkish. Fruit spherical, ± 10 mm in diameter. *Flowers white; December to June.* Forests, bushveld. *Hemm 78, 78A.*

W	S	C	N	E
---	---	---	---	---

Pyracantha M. Roem. (s. Afr.: 2 spp.) 3333010

Tutin *et al.* 1968. *Fl. Europ.* 2: 73.

Bailey. 1977. *Hortus Third*: 930.

angustifolia (Franch.) C.K. Schneid.*

Stiff, upright shrub, up to 4 m high. Leaves linear to oblanceolate, entire, glabrate above, greyish tomentose beneath. Fruits orange-red. *Flowers dull white; November to December.* Riverbanks. Native to southwestern China. *Duggan & Henderson 55.*

W	S	C	N	E
---	---	---	---	---

coccinea M. Roem.*

(= *Cotoneaster pyracantha* (L.) Spach,
= *P. pauciflora* André)

Shrub, up to 5 m high. Leaves lanceolate to oblong-ovate, serrulate, glabrate. Inflorescence finely pubescent. Fruit scarlet. *Flowers white.* Riverbanks. Native to Europe and Asia. *Duggan & Henderson 7.*

W	S	C	N	E
---	---	---	---	---

Rosa L. (s. Afr.: 2 spp.) 3389000

Tutin *et al.* 1968. *Fl. Europ.* 2: 25–33.

Bailey. 1977. *Hortus Third*: 974–978.

eglanteria L.*

(= *R. rubiginosa* L.)

Shrub, up to 2 m high. Prickles stout and hooked. Leaflets 5–7, ± densely glandular beneath, serrate. *Flowers light pink; November.* Riverbanks, roadsides. Native to Europe and Asia. *Ubbink 1278.*

W	S	C	N	E
---	---	---	---	---

Rubus L. (s. Afr.: 17 spp.) 3353000

Harvey. 1862. *F.C.* 2: 286–288.

Tutin *et al.* 1968. *Fl. Europ.* 2: 7–25.

Bailey. 1977. *Hortus Third*: 984–987.

Stirton. 1984. *Bothalia* 15: 101–106.

apetalus Poir.

(= *R. adolphi-friedericii* Engl.,

= *R. exsuccus* Steud.)

Scandent shrub. Leaves 5–7-foliolate, leaflets slightly discolorous, pubescent, venation on lower surface prominent. Corolla as long as or much shorter than calyx. *Flowers pink and mauve; July to June.* Forest margins, disturbed places. *Stirton 8024.*

W	S	C	N	E
---	---	---	---	---

cuneifolius Pursh

Erect shrublet, up to 1.5 m high. Leaves 3-foliolate, leaflets discolorous, margin strongly dentate. Corolla distinctly longer than calyx. Fruits black, adhering to torus. *Flowers white; November to December.* Forest margins, disturbed places. *Stirton 5747.*

W	S	C	N	E
---	---	---	---	---

flagellaris Willd.*

Prostrate shrublet. Leaves 3–5-foliolate, leaflets ovate, 35–70 × 25–50 mm. Corolla longer than calyx. *Flowers white; October.* Fruits black, adhering to torus. Mountain sourveld. Native from Canada to the Gulf States. *Stirton 9083.*

W	S	C	N	E
---	---	---	---	---

longepedicellatus (Gust.) C.H. Stirt.

(= *R. rigidus* Sm. var. *longepedicellatus* Gust.)

Scandent shrub. Inflorescence a well-developed, much ramified bracteose thyrses. Floricanes 3-foliolate, primocanes 7-foliolate. Corolla longer than calyx. *Flowers mauve and pink to white; July to June.* Forest margins, open grassland. *Meeuse 10011.*

W	S	C	N	E
---	---	---	---	---

ludwigii Eckl. & Zeyh. subsp. ludwigii

(= *R. rhodacantha* E. Mey.)

Scrambler, up to 1 m high. Leaflets deeply incised, venation on lower surface of leaflets scarcely pubescent, brown on dried specimens, easily discernible against greenish white or cream, finely woolly blade.

Flowers pale pink to crimson; November. Grassland. *Henrici* 1132.

W S C N E

ludwigii Eckl. & Zeyh. subsp. **spatiosus** C.H. Stirt.

Shrublet, up to 1.5 m high. Leaflets deeply incised, venation on lower surface of leaflets thickly pubescent, scarcely discernible against silver to greenish white, coarsely woolly blade. Flowers bright pink; November to January. Grassland, forest margins, alongside streams. *Devenish* 184.

W S C N E

niveus Thunb.*

(= *R. albescens* Roxb.,
= *R. lasiocarpus* Sm.)

Shrub or scrambler. Leaves discolorous, venation on both leaf surfaces prominent, lateral leaflets ovate, 30–35 × 16–19 mm. Corolla shorter than calyx. Fruits hairy. Flowers purplish pink; October to April. Riverbanks, roadside shrubland. Native to India and western China. *Van Steenis* 24161.

W S C N E

pinnatus Willd.

Scandent shrub. Leaves 7–9-foliolate. Leaflets green and glabrous or nearly so on both surfaces. Fruits orange. Flowers pink and mauve; July to June. Forest, streambanks. *Killick & Strey* 2433.

W S C N E

rigidus Sm.

(= *R. atrocoeruleus* Gust.,
= *R. discolor* E. Mey.)

Shrub, up to 2 m high. Leaves 3–5-foliolate, petioles and undersurfaces densely albo-tomentose, leaflets broadly ovate, serrate or doubly serrate. Petals obovate. Flowers purplish pink; October to January. Streambanks, kloofs, riverbanks. *Van Vuuren* 200.

W S C N E

rosifolius Sm.

(= *R. commersonii* Poir.)

Suberect shrublet, up to 1 m high. Leaves 7–9-foliolate, leaflets ovate-lanceolate, twice as long as broad. Fruits red, adhering to torus. Flowers white. Forest margins. *Burt Davy* 262.

W S C N E

Sanguisorba L. (s. Afr.: 1 sp.)

3381000

Proctor & Nordborg. 1968. Fl. Europ. 2: 33–34.

minor Scop. subsp. **muricata** Briq.

Perennial herb. Basal leaf rosette well developed, leaflets orbicular to elliptic. Angles of hypanthium winged, faces covered with irregular ridges, hypanthium up to 1.5 times as long as wide. Flowers greenish. Roadside grassland. *Hilliard & Burt* 9136.

W S C N E

RUBIACEAE

Trees, shrubs, herbs or climbers. Leaves opposite or whorled; stipules present, inserted between petioles (interpictolar), sometimes leaf-like and indistinguishable from leaves. Flowers regular. Calyx fused to ovary. Petals 4 or 5, united into a tube; mouth of tube usually hairy. Stamens 4 or 5, arising from corolla tube. Ovary inferior. Fruit a drupe, berry or capsule, crowned with persistent remains of calyx lobes.

Key after Dyer, Gen. 1: 602–605 (1975); Verdcourt in Kew Bull. 36,3: 508 (1981); Bridson in Kew Bull. 40,4: 691–692 (1985) and Puff in F.S.A. 31,1,2 (1986).

- 1a Ovules many, rarely few or 2 in each loculus, very rarely only 1 (*Kraussia*)..... 2
- 1b Ovules single in each loculus 23
- 2a Fruit dry, capsular or 2-ccocous or small fruits confluent into heads 3
- 2b Fruit baccate, indchiseent; inflorescence not fused into heads; shrubs or small trees 11
- 3a Inflorescence a compact or fused, globular head; calyx limb half-cleft; seeds many in each loculus **Breonadia**
- 3b Inflorescence ± lax; not fused into a head 4
- 4a Herbs or undershrubs; seeds not winged 5
- 4b Trees or shrubs; seeds winged 10
- 5a Flowers all or mostly 4-merous 6
- 5b Flowers 5-merous, pedicellate 9
- 6a Corolla tube cylindric, elongate; anthers overtopping stigmas, all included; corolla lobes valvate in aestivation; pollen grains small **Kohautia**
- 6b Corolla tube funnel-shaped or, if cylindric, then either anthers or stigma exserted or anthers overtopped by stigma 7
- 7a Corolla tube at least 20 mm long, funnel-shaped; anthers included and style usually exserted; pollen grains 3- or 4-porate . . . **Conostomium**
- 7b Corolla tube shorter than 20 mm, funnel-shaped or sometimes cylindrical; anthers exserted or if included, then ovary heterostylous 8

8a	Capsule opening septicidally as well as loculicidally; style entire; stigmas subglobose	Agathisanthemum
8b	Capsule opening loculicidally only, septum never splitting; capsule with horny wall, early dehiscent	Oldenlandia
9a	(5) Decumbent hydrophyte; leaves sessile or subsessile, soft; inflorescence long, pedunculate, solitary from nodes	Pentodon
9b	Terrestrial herbs or undershrubs; capsule loculicidal; calyx limb not markedly accrescent, not turning white	Pentas
10a	(4) Corolla valvate in aestivation, funnel-shaped; cymes spicate	Hymenodictyon
10b	Corolla contorted in aestivation, with slender, cylindric tube and spreading lobes	Crossopteryx
11a	(2) Seeds angular, numerous, small; calyx 5-lobed, globular in fruit, with glands on rim; corolla unequally 5- or 6-lobed	Heinsia
11b	Seeds rounded or, if angular, then few; corolla lobes contorted in aestivation	12
12a	Inflorescence terminal, sometimes on short, lateral branchlets	13
12b	Inflorescence axillary	20
13a	Calyx lobes long, contorted in same direction as corolla lobes in bud; style branched above	Leptactina
13b	Calyx lobes short and open in aestivation; style clavate or fusiform, rarely branched	14
14a	Flowers several to many, corymbose, sometimes on lateral shoots	15
14b	Flowers solitary or few together	16
15a	Corolla tube cylindric or narrowly funnel-shaped, shorter or not markedly longer than lobes, white, cream or pink	Tarenna
15b	Corolla tube broadly funnel-shaped to subcylindric, much longer than lobes, red	Burchellia
16a	Branches usually with some spinescent branchlets	17
16b	Branches without spines	19
17a	Corolla tube long, cylindric, very little expanded to mouth	Hyperacanthus
17b	Corolla tube $\pm$ funnel-shaped; ovary 2-locular	18
18a	Style cylindrical with broadly ellipsoid, winged stigmatic club ultimately dividing into 2 parts; ovules numerous all over outside of fleshy placenta; seeds discoid or compressed ellipsoid, embedded in pulp; fruits large; anthers not apiculate	Catunaregam
18b	Style narrowly clavate, winged at apex; ovules $\pm$ 5–8 on thin broadly attached placenta on fleshy loculus septum; seeds compressed ovoid-angular, not notched; not in a pulp but placental outgrowths somewhat developed; fruits small; anthers apiculate	Coddia
19a	Pollen grains in tetrads; flowers solitary or paired, terminal or appearing lateral on short branchlets; corolla tube cylindric; stipules sheathing, often truncate; young parts often glutinous	Gardenia
19b	Pollen grains single; placentas 2; calyx tube velutinous inside; flowers 1–10; corolla campanulate above; ovary partially or completely 2-locular	Rothmannia
20a	(12) Style club-shaped or fusiform, undivided or bidentate; ovules numerous; calyx truncate, dentate or cleft, lobes open in aestivation; corolla tube long, very slender; style exserted	Oxyanthus
20b	Style 2-branched	21
21a	Style short, fleshy, shorter than coherent arms; flowers in lax cymes; ovules 1 or 2 in each loculus	Kraussia
21b	Style long, filiform or linear, much exceeding spreading arms; flowers solitary or in modified congested cymes; ovules 2 or more in each loculus	22
22a	Inflorescence mostly many-flowered and strongly contracted; corolla glabrous or hairy (but not densely silky sericeous) outside	Tricalysia
22b	Inflorescence reduced, mostly 1 (rarely 2)-flowered; corolla densely silky sericeous outside	Sericanthe
23a	(1) Flowers in compact, confluent heads, becoming somewhat fleshy in fruit	Cephalanthus
23b	Flowers not giving rise to confluent, fleshy heads in fruit	24
24a	Radicle of embryo superior	25
24b	Radicle of embryo inferior	36
25a	Inflorescence terminal, usually pedunculate in dense spikes or heads; ovary 2-locular; style with 2 filiform branches; perennial herbs with woody rootstock	Pentanisia
25b	Inflorescence axillary, fascicled or shortly pedunculate; perennial herbs, shrubs or trees	26
26a	Leaves 3–5 at nodes; calyx truncate, irregularly toothed or shortly lobed	Fadogia
26b	Leaves opposite, or almost invariably so	27
27a	Dwarf; branches produced annually from rootstock; inflorescence usually few-flowered; ovary 2-locular; calyx lobes triangular or oblong, shorter than 2.5 mm	Pygmaeothamnus
27b	Trees, shrubs or climbers; or ovary more than 2-locular when branches annual from underground stems	28
28a	Ovary 2-locular; shrubs, trees or climbers	29
28b	Ovary 3–5(6)-locular	32
29a	Branches producing rigid branchlets $\pm$ at right angles, somewhat spinescent; calyx 4-lobed; flowers solitary or few together on short pedicels	Pyrostria
29b	Branches diversely branched	30
30a	Style equalling corolla tube, shortly exceeding it or occasionally twice as long; stigmatic knob $\pm$ as long as wide, rarely longer; anthers with tips exserted or completely exserted, never reflexed; small trees, or shrubs, rarely scandent, never lianas; leaves restricted to new growth at apex of stems or not; stipules with or without fine hairs inside	Canthium sens. lat.
30b	Style exceeding corolla tube $\pm$ twofold or often much more; stigmatic knob distinctly longer than wide; anthers fully exserted, reflexed or not; tall trees, shrubs or lianas; leaves not restricted to apices of stems, except in very few species; stipules never with fine hairs inside	31
31a	Trees or shrubs; leaves typically subcoriaceous to coriaceous or occasionally chartaceous; if scandent, then stipules triangular to truncate at base with strongly keeled lobe; calyx limb a dentate to repand rim, only occasionally equalling disc, usually much shorter; anthers usually reflexed; fruit not or scarcely indented at apex; pyrene cartilaginous to woody with shallow apical crest; endosperm entire	Psydrax

- 31b Lianas or scandent bushes with perpendicular lateral branches, often subtended by rotund leaves; leaves chartaceous to subcoriaceous (rarely coriaceous); stipules lanceolate to ovate or triangular acuminate; calyx limb usually exceeding disc, dentate or sometimes lobed; anthers usually erect; fruit strongly or slightly indented at apex; pyrene woody with lid-like area surrounding crest; endosperm frequently streaked with resinous areas **Keetia**
- 32a Ovary 3-locular, spinescent shrubs; calyx 4-toothed; corolla campanulate, with deflexed hairs within **Electroniella**
 32b Ovary (4)5(6)-locular 33
- 33a Calyx 5-partite; segments spatulate, becoming reflexed; cymes dichotomously branched; leaves lighter underneath **Lagynias**
 33b Calyx 5-lobed or -partite; segments not becoming reflexed 34
- 34a Inflorescence somewhat lax; calyx 5-toothed or shortly 5-lobed **Vangueria**
 34b Inflorescence closely fasciculate on short pedicels or very shortly pedunculate, rarely somewhat lax 35
- 35a Calyx shortly 5-lobed; leaves densely tomentose; shrub or tree **Tapiphyllum**
 35b Calyx 5-partite, segments longer than ovary; trees, shrubs or dwarf **Pachystigma**
- 36a (24) Corolla contorted in aestivation; shrubs or trees 37
 36b Corolla valvate in aestivation 38
- 37a Flowers axillary, usually 5–7-merous; bracteoles connate at or near base of calyx into a single or double calyculus **Coffea**
 37b Flowers terminal on branches and twigs, rarely axillary, 4-merous; leaves with bacterial nodules **Pavetta**
- 38a Stipules almost invariably present, unlike leaves 39
 38b Stipules foliaceous, verticillate, rarely 0; diffusely branched weak herbs with 4-angled branches 45
- 39a Ovules basal, erect, anatropous 40
 39b Ovules attached to septum, amphitropous; herbs 44
- 40a Shrub or small tree, bisexual; fruit indehiscent **Psychotria**
 40b Shrublets, climbing undershrubs or herbs, usually perennial; often with unisexual and bisexual flowers mixed 41
- 41a Climbing shrub; fruits with shiny papery exocarp and 2 laterally compressed, winged, glabrous pyrenes **Paederia**
 41b Shrublets or herbs, not climbing 42
- 42a Calyx with 1–3 lobes elongating and becoming foliaceous **Otiophora**
 42b Calyx equally lobed or toothed 43
- 43a Inflorescence lax; perennial herbs with rhizomes or rootstocks; leaves strictly decussate, blades relatively large and thin, distinctly petiolate **Galopina**
 43b Inflorescence much reduced and inconspicuous; large shrubs, dwarf shrubs, short-lived subshrubs or perennial herbs; leaves decussate or in whorls of 3 or 4, blades mostly small and narrow, frequently ericoid, often without distinct petioles **Anthospermum**
- 44a (39) Ovary 3-locular; stigmas 3; fruit with 3 cocci **Richardia**
 44b Ovary usually 2-locular; stigmas 2 or 1 capitate stigma; fruit capsular with 2 valves, either dehiscent from base to apex or in reverse direction or with 2 cocci, 1 or both dehiscent **Spermocoe**
- 45a (38) Leaves petiolate; corolla mostly 5-merous; fruit fleshy, glabrous **Rubia**
 45b Leaves (sub)sessile; corolla mostly 4-merous; fruits dry, glabrous or variously hairy **Galium**

Agathisanthemum Klotzsch (s. Afr.:

3 spp.)

8136140

Verdcourt. 1989. F.Z. 5,1: 107–111.

bojeri Klotzsch subsp. bojeri

(= *A. bojeri* Klotzsch subsp. *australe* Bremek.)

Subshrub or herb, 0,25–1,50 m high. Calyx lobes 2 mm long. Inflorescence lax but sometimes flowers in collections of dense subcapitate clusters. *Flowers white, creamy white or greenish white; September to May.* Grassland, woodland, riverine forest and as weed on old lands. *Herman 165.*

W S C N E

globosum (Hochst. ex A. Rich.) Bremek.

(= *A. quadricostatum* Bremek.,= *A. quadricostatum* Bremek. var. *pubescens* Bremek.)

Herb, 0,1–1,2 m high. Inflorescence not lax, flowers in large capitula. Calyx lobes 3,3–9,0 mm long. *Flowers white, cream, pale yellow, blue, lilac, pink, purple or mauve; March.* Grassland, woodland, roadsides. *McCallum 137.*

W S C N E

Anthospermum L. (s. Afr.: 21 spp.) 8438000

Puff. 1986. F.S.A. 31,1,2: 8–36.

Puff. 1989. F.Z. 5,1: 150–158.

herbaceum L.f.

(= *A. lanceolatum* Thunb.)

Erect, scrambling, trailing or sometimes rosette-like perennial herb or subshrub, 0,75–3,00 m high, not dioecious. Leaves decussate, ovate, ovate-lanceolate, lanceolate to linear-lanceolate, glabrous, papillate or shortly hairy, distinctly discolorous. Stipular sheath with (3–)5(–7) filiform setae, seldom with 1 triangular seta. Mericarps elliptic, oblong to obovate, covered with tuberculate structures, shortly hairy, papillate or subglabrous, mostly with broad conspicuous longitudinal grooves between mericarps. *Flowers greenish to yellow or yellowish, sometimes reddish purplish tinged; July to June.* Forest edge, scrub, riverine thicket, edge of marshes, grassland, rocky slopes. *Forrester & Gooyer 61.*

W S C N E

hispidulum E. Mey. ex Sond.

(= *A. burkei* Sond.,= *A. arenicolum* Greves)

Dwarf shrub, (100–)150–400(–600) mm tall, not dioecious. Leaves decussate, oblanceolate, ovate-lanceo-

late to narrowly lanceolate, 5–12(–20) × 1,0–3,5(–5,0) mm, densely covered with spreading hairs. Mericarps oblong, densely covered with spreading hairs. *Flowers greenish yellow to yellowish; November to April*. Rocky ridges, outcrops; in cracks of rock sheets or rocky grassland. *Elan-Puttick 303*.

W S C N E

rigidum Eckl. & Zeyh. subsp. **rigidum**

(= *A. pumilum* Sond. subsp. *rigidum* (Eckl. & Zeyh.) Puff)

Robust dwarf shrub, (100–)200–400(–550) mm tall, not dioecious. Stems ± sparingly to much-branched. Leaves decussate, ovate-lanceolate, often tough and thickish, glabrous, 3–6(–8) × 1,0–1,5 mm. Mericarps ± sparsely covered with whitish, curved, ± hook-like hairs. *Flowers greenish; January*. Rocky places, e.g. koppies, hillsides. *Mogg 7983*.

W S C N E

rigidum Eckl. & Zeyh. subsp. **pumilum** (Sond.) Puff

(= *A. pumilum* Sond.)

Dwarf or subshrub, 50–400 mm tall, not dioecious. Stems numerous, mostly unbranched. Leaves decussate, linear, linear-(ob-)lanceolate or narrowly lanceolate, glabrous, (4–)6–12(–22) × (0,5–)0,8–1,5(–2,0) mm. Mericarps elliptic to obovate, mostly ± glabrous. *Flowers greenish to yellowish; October to May*. (Rocky) grassland or open woodland. *Jacobsen 877*.

W S C N E

welwitschii Hiern

(= *A. ammanioides* non S. Moore)

Shrub, 1–3 m high, dioecious. Leaves decussate; oblanceolate to elliptic, (7–)10–35 × (1,0–)1,5–3,5 mm, glabrous. Stipular sheaths with 3–5(–7 or 8) setae. Female plants with conspicuous, condensed cylindrical inflorescences. Mericarps oblong, elliptic to obovate, glabrous or sparsely hairy. *Flowers greenish yellow to pale yellow, occasionally purplish tinged outside; November to August*. Edge of afro-montane forest or scrub, sometimes disturbed sites. *Hemm 497*.

W S C N E

Breonadia Ridsdale (s. Afr.: 1 sp.) 8226000

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 443–445.

salicina (Vahl) Hepper & J.M. Wood

(= *Adina galpinii* Oliv.,

= *A. microcephala* (Delile) Hiern)

Medium to large tree, (1,8–)3,0–21,0 m high. Leaves in whorls of 3 or 4, lanceolate, glabrous. Inflorescence solitary, dense, a 'globular' head. Fruit a septicidal capsule. *Flowers pinkish green or white or yellowish brown; December to June*. Gallery forest by rivers and streams, often with the roots in water. *Hemm 485*.

W S C N E

Burchellia R. Br. (s. Afr.: 1 sp.) 8281000

Phillips. 1924. Flower. Pl. Afr. 4: t. 145.

bubalina (L.f.) Sims

(= *B. capensis* R. Br.,

= *Lonicera bubalina* L.f.)

Small tree, 3,6–4,2 m high. Leaves 105 × 55 mm, broadly ovate, rounded or subcordate at base, pubescent on veins beneath, petiolate. Inflorescence terminal, many-flowered. Fruit a subglobose berry crowned with persistent calyx lobes. *Flowers bright red or orange; July to June*. Forest, forest margin, mountain-sides. *Codd 8199*.

W S C N E

Canthium Lam. (s. Afr.: 11 spp.) 8352000

Sonder. 1865. F.C. 3: 17–18.

Oliver & Hiern. 1877. F.T.A. 3: 132–146.

Brown. 1906. Kew Bull.: 105.

Codd. 1961. Kirkia 1: 108–109.

Codd. 1967. Bothalia 9: 345–346.

Bridson. 1987. Kew Bull. 42.3: 634.

ciliatum (Klotzsch) Kuntze

(= *Plectronia ciliata* (Klotzsch) Sond.)

Small tree or shrub, up to 3 m high. Branches spiny. Leaves ovate to subcordate-ovate, discolorous, sparsely hairy to glabrous. Inflorescence axillary, 1- or 2-flowered, subsessile to pedunculate. Tube of corolla longer than limb, throat glabrous. *Flowers greenish or yellowish; September to January*. Forest or forest margin. *Nel 245*.

W S C N E

gilfillanii (N.E. Br.) O.B. Mill.

(= *Plectronia gilfillanii* N.E. Br.)

Small tree or shrub, up to 5 m high, rarely armed. Leaves ovate to elliptic, densely velvety tomentose. Cymes axillary, pedunculate, many-flowered. Corolla throat subvillous to glabrous. *Flowers greenish; September to November*. Rocky outcrops, ridges and hillsides. *Tilney 4* (flowers) & 128 (fruit).

W S C N E

inerme (L.f.) Kuntze

(= *C. ventosum* (L.) Kuntze,

= *Lycium inerme* L.f.)

Small tree or shrub, up to 5 m high. Branches spiny. Leaves ovate to ovate-oblong, glabrous, discolorous. Inflorescence 10–20-flowered. Corolla throat villous. *Flowers greenish; June and September to November*. Forest, forest edges, hillsides. *Kluge 182* (flowers), *Buitendag 427* (fruit).

W S C N E

mundianum Cham. & Schltdl.

(= *Plectronia mundiana* (Cham. & Schltdl.) Pappe)

Small tree or shrub, up to 5 m high, unarmed. Leaves ovate to elliptic, concolorous, glabrous or sometimes sparsely pubescent beneath, domatia conspicuous. Corymbs 5–10-flowered, shortly pedunculate. Throat of corolla villous. *Flowers greenish; August to November*. Forest margin and rocky hillsides. *Scheepers 691* (flowers), *Stalmans 826* (fruit).

W S C N E

pauciflorum (Klotzsch) Kuntze(= *Plectronia pauciflora* Klotzsch)

Small tree or shrub, up to 4 m high, sometimes armed with small spines. Leaves ovate, concolorous, glabrous. Inflorescence 2-flowered, long-pedunculate. Corolla throat naked. *Flowers greenish; February.* Forest margin. *Kluge 996* (flowers), *Kruger 283* (fruit).

W S C N E

setiflorum Hiern subsp. **setiflorum**

Small tree or shrub, up to 4 m high, unarmed. Young stems, pedicels and calyx tube covered with straw- to rust-coloured, rather stiff, upwardly directed hairs. Leaves elliptic to ovate, hispidulous to glabrescent. Inflorescence axillary, 5–7-flowered, subsessile, or shortly pedunculate. Corolla throat villous. *Flowers pale yellow or cream; January to April.* Sandy flats. *Codd 5418.*

W S C N E

suberosum Codd

Small tree or shrub, 3–6 m high, unarmed. Nodes conspicuously thickened. Bark on older twigs scurfy, cracking in rectangular network, bark on main trunk corky. Leaves elliptic to oblanceolate-obovate, glaucous. Inflorescence axillary, 1–4-flowered cymes; subsessile. Corolla tube 2 mm long, lobes 3 mm long. *Flowers green; August to November.* Wooded rocky hillsides, usually kloofs or along dry watercourses. *Jacobsen 1063* (flowers), *Codd 10399* (fruit).

W S C N E

Catunaregam Wolf (s. Afr.: 1 sp.) 8283100

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 496–500.

spinosa (Thunb.) Tirveng. subsp. **spinosa**(= *Randia kraussii* Harv.,= *Xeromphis obovata* (Hochst.) Keay)

Small tree or shrub, 1.8–7.5 m high. Spines present or absent, alternate or opposite. Leaves obovate to obovate-spathulate, 12–130 × 7–58 mm, sparsely pubescent to glabrous. Fruit up to 30 × 22 mm. *Flowers white or yellowish white, usually turning yellow; September to December and March to May.* Forest. *Zambatis 1712.*

W S C N E

Cephalanthus L. (s. Afr.: 1 sp.) 8230000

Oliver. 1881. Hooker's Icon. Pl. 14: t. 1331.

natalensis Oliv.

Small tree or shrub, scrambler or climber, up to 5 m high. Leaves ovate to ovate-elliptic, acute to acuminate, glabrous. Inflorescence a loose 'globular' head, terminal. Fruit heads becoming succulent. *Flowers with white or greenish tube, lobes maroon; calyx red or*

pink; July to June. Forest margins; mountain grassland. *Hanekom 2293.*

W S C N E

Coddia Verdc. (s. Afr.: 1 sp.)

8283110

Verdcourt. 1981. Kew Bull. 36: 507–511.

rudis (E. Mey. ex Harv.) Verdc.(= *Randia rudis* E. Mey. ex Harv.,= *Xeromphis rudis* (E. Mey. ex Harv.) Codd)

Shrub, 1.0–2.5 m high. Corolla tube developed with upper funnel-shaped part and lower cylindrical part. Style narrowly clavate, winged at apex. Anthers apiculate. Fruits small, seeds compressed ovoid-angular, not in a pulp. *Flowers white, cream or yellow; August to January.* Open woodland and scrub and margins of forest. *Van der Schijff 709.*

W S C N E

Coffea L. (s. Afr.: 2 spp.)

8381000

Bridson. 1982. Kew Bull. 36: 817–859.

zanguebariae Lour.(= *C. ibo* A. Froehner,= *C. schumanniana* Busse)

Shrub or tree, 3–5 m high. Very young stems glabrous. Leaves broadly elliptic to rotund or rarely elliptic, 54–138 × 22–78 mm. Flowers axillary, often in fascicles of 3 or more per axil. Stigma and anthers well exerted. Fruit stipitate. *Flowering September to November.* Riverine thicket. *Pole-Evans H18863.*

W S C N E

Conostomium (Stapf) Cufod. (s. Afr.:

2 spp.)

8136070

Verdcourt. 1989. F.Z. 5,1: 101–103.

natalense (Hochst.) Bremek.(= *Oldenlandia natalensis* (Hochst.) Kuntze)

Perennial herb, 0.2–1.2 m high. Leaves 10–23 mm wide, ± rounded at base. Pedicels mostly very short. Corolla tube up to 18 mm long. *Flowers pale blue, lilac or purplish pink; October to June.* Open grassland to dense scrub. *Meeuse 9226.*

W S C N E

zoutpansbergense (Bremek.) Bremek.(= *Oldenlandia zoutpansbergensis* Bremek.)

Perennial herb, up to 500 mm tall. Leaves lanceolate, 1–7 mm wide, narrowed at base, narrowly attenuate to acute apex. Pedicels 2–7(–15) mm long. Corolla tube 25–35 mm long, lobes lanceolate. *Flowers white, blue or pale mauve-pink; January to April.* Sandy areas. *Van Wyk 4011.*

W S C N E

Crossopteryx Fenzl (s. Afr.: 1 sp.) 8212000

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 455–457.

febrifuga (Afzel. ex G. Don) Benth.

(= *C. kotschyana* Fenzl,
= *Rondeletia febrifuga* Afzel. ex G. Don)

Small tree or shrub, 1.8–15.0 m high. Young stems glabrous to tomentose. Leaves elliptic, elliptic-oblong, ovate, obovate or almost round, glabrous to densely pubescent or velvety. Inflorescence dense, branched, terminal, corymbose panicles. Capsule ellipsoid or globose, crustaceous, 6–10 mm long. *Flowers creamy white or pale yellow, tube tinged pink; December and January.* Deciduous woodland and wooded grassland, often on stony hillsides. *Lamont 44* (flowers), *Rowland-Jones 28A* (fruit).

W S C N E

Fadogia Schweinf. (s. Afr.: 3 spp.) 8359010

Verdcourt. 1981. Kew Bull. 36: 515–520.

homblei De Wild.

(= *F. fragrans* Robyns,
= *F. monticola* Robyns)

Perennial herb, up to 500 mm tall. Leaves discolorous, lower surface densely white papillate, upper surface green and glabrous. Calyx lobes triangular-lanceolate, 2.0–3.5 mm long. Corolla tube 3–4 mm long. *Flowers yellowish green; October to February.* Grassland, margins of tree clumps and woodland. *Pienaar 638.*

W S C N E

tetraquetra Krause var. **tetraquetra**(= *F. mucronulata* Robyns)

Perennial herb, up to 0.6 m high. Stems glabrous or spreading hairy. Leaves and buds glabrous. Calyx limb with distinct teeth. Corolla tube shorter than 10 mm. *Flowers yellow, green, white; October to January.* Grassland often on mountainous areas. *Gerstner 5611.*

W S C N E

tetraquetra Krause var. **grandiflora** (Robyns) Verdc.(= *F. grandiflora* Robyns)

Perennial herb, up to 0.6 m high. Stems covered with dense crisped hairs. Leaf blades with scattered short seta-like hairs above and midrib beneath with dense hairs similar to those on stems or with pubescence ± all over venation beneath. Buds glabrous or hairy. Calyx and corolla as in var. *tetraquetra*. *Flowers yellow; October to January.* Grassland with scattered trees and light woodland. *Stalmans 781.*

W S C N E

Galium L. (s. Afr.: 13 spp.) 8486000

Puff. 1986. F.S.A. 31,1,2: 65–75.

capense Thunb. subsp. **garipense** (Sond.) Puff(= *G. garipense* Sond.)

Ascending to erect perennial herb, (100–)200–500 (–600) mm tall. Stems glabrous, with few minute re-

curved prickles on angles and/or with short whitish hairs. Leaves in whorls of 6–8, up to 20(–23) mm long, linear, glabrous, sometimes with few small recurved prickles on margins. Inflorescence many-flowered; peduncles and pedicels glabrous. Mericarps densely covered with short curled whitish hairs. *Flowers bright yellow, sometimes creamy yellow or greenish yellow; September to March.* Along streambanks, in vleis, on damp slopes or open grassland. *Codd 3457.*

W S C N E

scabrelloides Puff

Decumbent or climbing perennial herb. Stems with white spreading hairs, at least on angles. Leaves in whorls of (7)8–10, up to 20(–22) mm long, linear to linear-lanceolate or oblanceolate, both surfaces or at least midrib below with white straight spreading hairs, margins with densely set recurved prickles. Inflorescence many-flowered, peduncles and pedicels hairy. Mericarps densely covered with straight spreading white hairs. *Flowers bright yellow, creamy yellow, greenish yellow or greenish; January to March.* Forest edges or scrub. *Turner 1430.*

W S C N E

spurium L. subsp. **africanum** Verdc.(= *G. aparine* non L.)

Prostrate to semi-erect annual herb. Stems with recurved prickles on angles. Leaves in whorls of 6–8, up to 38(–45) mm long, linear-lanceolate to obovate; upper surface glabrous or with few scattered ± straight or curled hairs, midrib beneath and margins with coarse recurved prickles. Flowers mostly single on peduncles/pedicels with recurved prickles or (seldom) glabrous. Mericarps with hooked white hairs. *Flowers greenish, greenish white or creamy white; November and January.* Along riverbanks, forest edges and in cultivated and disturbed ground. *Devenish 807.*

W S C N E

thunbergianum Eckl. & Zeyh. var. **thunbergianum**(= *G. rotundifolium* non L.)

Suberect or procumbent perennial herb. Stems, leaves, peduncles and pedicels glabrous or nearly so. Leaves in whorls of 4, 3-nerved, ovate, elliptic or rhombic. Inflorescence many-flowered. Mericarps densely covered with hooked white hairs. *Flowers greenish, greenish white to yellowish; December to May.* Forest margin, scrub or rocky grassland. *Buitendag 823.*

W S C N E

thunbergianum Eckl. & Zeyh. var. **hirsutum** (Sond.)

Verdc.

(= *G. rotundifolium* L. var. *hirsutum* Sond.)

Suberect or procumbent perennial herb. Same as var. *thunbergianum* but stems (mainly angles), leaves, peduncles and pedicels densely covered with short spreading white hairs. *Flowers greenish, greenish white, yellowish; December to April.* Forest margin, scrub or rocky grassland. *Kluge 2239.*

W S C N E

Galopina Thunb. (s. Afr.: 4 spp.) 8435000

Puff. 1986. F.S.A. 31.1.2: 48–52.

aspera (Eckl. & Zeyh.) Walp.
(= *Oxyspermum asperum* Eckl. & Zeyh.)

Perennial herb, (0,3–)0,5–1,2(–1,4) m high. Stems with short shoots; short shoot leaves often as long as long shoot leaves. Leaves ovate, elliptic or ovate-lanceolate, both surfaces (particularly main veins) ± densely covered with short spreading whitish to yellowish hairs, seldom papillate or subglabrous. Inflorescence ± narrowly cylindrical, peduncles and pedicels (0,8–)1,0–5,0(–6,0) mm long. Fruits warty, glabrous. *Flowers greenish, greenish yellow, purplish or brownish red tinged; January to March.* Forest edge or scrub in sunny places. *Scheepers 1101.*

W S C N E

circaeoides Thunb.

Erect or occasionally decumbent perennial herb, (0,3–)0,4–1,2(–1,5) m high. Stems often with short shoots; leaves of short shoots smaller than long shoot leaves. Leaves glabrous or sparsely hairy, lanceolate to ovate-lanceolate. Inflorescence lax, broadly pyramidal to ± spheroidal; peduncles and pedicels (7–)12–26(–37) mm long in fruit, filiform and slender. Ovary and fruit warty, glabrous. *Flowers whitish, creamy white, yellowish or greenish; occasionally reddish purplish tinged outside; December to March.* Kloof or gallery forest; scrub along streams or bushclumps. *Buitendag 819.*

W S C N E

Gardenia Ellis (s. Afr.: 7 spp.) 8285000

Verdcourt. 1979. Kew Bull. 34.2: 345–360.

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 500–511.

resiniflua Hiern subsp. resiniflua

Small tree or shrub, 1,8–4,5 m high, pubescent to densely hairy. Leaves 15–100(–140) mm long. Corolla tube 12–50 mm long. Placentas 2. Fruits small, subglobose, 9–14 × 9–12 mm, densely pubescent. *Flowers white, sometimes becoming yellowish; August to December and March to April.* Open woodland on rocky ridges or hillsides. *Hardy 6811.*

W S C N E

ternifolia Schumach. & Thonn. subsp. jovis-tonantis(Welw.) Verdc. var. *goetzei* (Stapf & Hutch.) Verdc.(= *G. jovis-tonantis* non (Welw.) Hiern)

Small tree or shrub, 1–6 m high. Leaf blades sparsely to densely scabrid-pubescent, 20–100 × 15–25 mm. Corolla tube 30–70 mm long, glabrous to hairy outside. Fruit ± 55–75 × 30–50 mm, not distinctly ribbed. *Flowers white at first, later bright then dull yellow; September to December.* Woodland. *Jenkins 8167* (flower); *Stalmans 1053* (fruit).

W S C N E

volkensii K. Schum. subsp. volkensii var. volkensii(= *G. spatulifolia* non Stapf & Hutch.)

Tree or shrub, 0,9–10,0 m high. Leaves usually glabrous. Fruit (50–)70–110 × (50–)60–100 mm, usually with well-defined coarse ribs. Seeds (4–)5–10 mm long. *Flowers white or cream turning yellow or orange; August to February.* Grassland with scattered trees, thicket, woodland in rocky places and along dry watercourses. *Story 6034.*

W S C N E

volkensii K. Schum. subsp. volkensii var. saundersiae

(N.E. Br.) Verdc.

(= *G. saundersiae* N.E. Br.)

Tree or shrub, 0,9–10,0 m high. Leaves, fruit and seeds as in var. *volkensii* but calyx lobes enlarged. *Flowers white or cream turning yellow or orange; December.* Sandveld. *Van der Schijff 3352.*

W S C N E

volkensii K. Schum. subsp. spatulifolia (Stapf &*Hutch.) Verdc.*(= *G. spatulifolia* Stapf & Hutch.)

Tree or shrub, 0,9–10,0 m high. Leaves glabrous to finely puberulous. Fruits 40–75 × 27–43 mm, mostly without ribs; seeds (4,0–)5,0–6,5 mm long. *Flowers white or cream, turning yellow or orange.* Riverbank. *Van Graan & Hardy 450.*

W S C N E

Heinsia DC. (s. Afr.: 1 sp.)

8326000

Verdcourt. 1976. Kew Bull. 31: 184.

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 476–477.

crinta (Afzel.) G. Taylor subsp. parviflora (K. Schum. & Krause) Verdc.(= *H. parviflora* K. Schum. & Krause,= *H. pulchella* K. Schum.)

Small tree or shrub, 1,0–4,5 m high. Leaf blades small, shorter than 60 mm, hairy only on main veins beneath, tertiary venation not very evident beneath. Stipule lobes short, not long-attenuate at apex. Flowers solitary or in few-flowered cymes. Calyx lobes 3,5–6,5 mm long, 0,8–2,5 mm wide, claw part widened at base. Fruit 8–12 mm long. *Flowers white, tube greenish outside; November to March.* Bushland and forest edges. *Schlieben 9300.*

W S C N E

Hymenodictyon Wall. (s. Afr.: 1 sp.) 8197000

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 452–455.

parvifolium Oliv. subsp. parvifolium

Small tree or shrub, (1,2–)3,6–4,5(–10,0) m high. Stems mostly glabrescent. Leaves glabrous or rarely pubescent on nerves. Inflorescence 10–80 mm long. Capsule ellipsoid, 15–25(–40) mm long, prominently

lenticellate. *Flowers white, greenish white or yellow, sometimes tinged red in bud; February.* Mixed bushland and thicket; often on rocky outcrops. *Van der Schijff 2324.*

W S C N E

Hyperacanthus *E. Mey. ex Bridson*

(s. Afr.: 2 spp.)

8285040

Marais, 1956. *Flower. Pl. Afr.* 31: t. 1229.

Bridson & Robbrecht. 1985. *Kew Bull.* 40: 273–286.

amoenus (*Sims*) *Bridson*

(= *Gardenia amoena* Sims,

= *Gardenia neuberia* Eckl. & Zeyh.)

Small tree or shrub, up to 7 m high. Spines frequently present, upwardly angled or less often patent. Leaves usually congested, narrowly obovate to obovate or sometimes elliptic to broadly elliptic, petiole 1,5–2,0 (–5,0) mm long. Peduncle 0–2 mm long. Flowers usually solitary. Corolla tube 15–50 mm long, glabrous to puberulous towards top outside. Fruit spherical to broadly ellipsoid, rarely tapered at apex. *Flowers white turning creamy yellow, lobes rosy pink to carmine; November to April.* Open hillsides, in scrub bush; moist wooded kloofs and closed forest. *Schlieben & Strey 8296.*

W S C N E

Keetia *E. Phillips* (s. Afr.: 1 sp.)

8352050

Bridson. 1986. *Kew Bull.* 41,4: 967–971.

gueinzii (*Sond.*) *Bridson*

(= *Canthium gueinzii* Sond.,

= *K. transvaalensis* E. Phillips)

Climber or scandent shrub, up to 5 m high. Leaves sparsely to densely hairy, leaf bases rounded, cordate or subcordate. Stipules narrowly ovate to ovate. Bracts linear-lanceolate to lanceolate, 3–6 mm long. Calyx limb dentate, up to 1,5 mm long. *Flowers white, cream or yellow; September to February.* Forest, forest edges or riverine bush. *Scheepers 813* (flowers), *Hemm 45a* (fruit).

W S C N E

Kohautia *Cham. & Schldl.* (s. Afr.:

14 spp.)

8136060

Mantell. 1989. *F.Z.* 5,1: 85–101.

amatymbica *Eckl. & Zeyh.*

(= *Hedyotis amatymbica* (Eckl. & Zeyh.) Steud.,

= *Oldenlandia amatymbica* (Eckl. & Zeyh.) Kuntze)

Annual or perennial herb, 0,15–0,60 m high. Roots fibrous, often with bead-like nodules. Inflorescence distinctly capitate. Corolla tube (10,3–)11,0–19,3(–23,1) mm long. *Flowers with lobes white, pinky white, cream, pale yellow or khaki-yellow above, tube and lobes darker below; July to June.* Burnt grassland, rocky

slopes and koppies, moist depressions, disturbed or cultivated ground on roadsides. *Stalmans 219.*

W S C N E

aspera (*B. Heyne ex Roth*) *Bremek.*

(= *Hedyotis aspera* B. Heyne ex Roth,

= *Oldenlandia aspera* (B. Heyne ex Roth) DC.)

Annual herb, 100–300 mm tall. Flowers in subsessile or sessile pairs at nodes. Corolla tube (2,1–)2,3–3,1 (–3,4) mm long, dilated part ± equalling narrow part in length. *Flowers with lobes mostly white, bluish or pinkish white above, bluish or mauve below, tube light green or greenish white; March.* Grassland, open woodland and disturbed areas. *Codd 1025.*

W S C N E

caespitosa *Schnizl.* subsp. **brachyloba** (*Sond.*) *Mantell*

(= *K. lasiocarpa* Klotzsch,

= *K. brachyloba* (Sond.) Bremek.,

= *K. latibrachiata* Bremek.)

Annual or perennial herb, 0,1–0,8 m high. Leaves mostly narrowly linear-lanceolate to lanceolate-elliptic, up to 8,0(–9,5) mm wide. Inflorescence with 1 or 2 flowers at a node. Calyx tubes ovoid-ellipsoid. Corolla tube 6,5–14,0(–16,0) mm long. Capsules subglobose. *Flowers white, cream, greyish or yellowish above, darker beneath, tube brownish, reddish or greenish; October to June.* Sandy areas, bushland, rocky or stony areas, grassland, disturbed places. *Hanekom 1659.*

W S C N E

cynanchica *DC.*

(= *K. gracilifolia* Bremek.,

= *K. omahekensis* (Krause) Bremek.,

= *K. raphidophylla* Bremek.)

Annual or perennial herb or shrub, (0,06–)0,10–0,60 (–1,00) m high. Leaves filiform. Flowers 1 or mostly 2 at a node, 1 subsessile, the other pseudopedicellate, pedicels to 12(–20) mm long. Corolla tube (8,5–)9,6–14,2(–16,0) mm long. Calyx tube and capsule distinctly hemispherical-obconic. *Flowers with lobes white, cream, rarely pinkish mauve above, tube and lobes darker below: brown, reddish brown, olive-green, olive-brown; July to June.* In arid areas along riverbanks; in more moist areas, open or wooded grassland, bushveld, disturbed places. *Zwanziger 427.*

W S C N E

microflora *Mantell*

Annual herb, 50–230 mm tall. Flowers 1 or 2 at a node, terminal one ± sessile, lateral one on distinct pseudopedicel, flowers small, inconspicuous. *Flowers greenish; March.* Arid areas on margins of dried-up seasonal watercourses, on flat sandy areas; grazed grassland around water pans; calcareous white silty sand over limestone. *Codd & Dyer 3795.*

W S C N E

subverticillata (*K. Schum.*) *Mantell* subsp. **subverticillata**

(= *Oldenlandia subverticillata* K. Schum.,

= *O. sordida* K. Krause)

Annual herb, 0,11–0,60 m high. Flowers small, mostly in subsessile or sessile pairs at nodes. Corolla tube

(2,7–)3,3–5,8(–6,0) mm long, dilated part a quarter to a third the length of narrow part; narrow part glabrous; dilated part and back of corolla lobes scabrid. *Flowers with lobes white, off-white, grey, yellowish green, bluish white or brownish, tube darker; November to April.* Open areas in grassland, open mixed woodland, in sandveld, in rocky areas. *Galpin 487M.*

W S C N E

virgata (Willd.) Bremek.

(= *Hedyotis virgata* Willd.,
= *Oldenlandia virgata* (Willd.) DC.)

Annual or perennial herb, (60–)150–500 mm tall. Leaf apices with distinct crista up to 1 mm long; stipular lobes fringe-like. Inflorescence with 2, rarely 3 or more, flowers at a node, pedicellate or subsessile. Corolla tube (2,7–)3,0–6,5(–7,0) mm long. *Flowers with lobes white, cream, yellowish, bluish, mauve, purple, pink or red above, back of lobes and tube paler or brownish to pinkish green or greenish white; September to May.* Moist localities, open, swampy or wooded grassland; disturbed places. *Van Graan & Hardy 438.*

W S C N E

Kraussia Harv. (s. Afr.: 1 sp.)

8308010

Killick. 1971. *Flower. Pl. Afr.* 41: t. 1627.

floribunda Harv.

(= *K. schlechteri* (K. Schum.) Bullock,
= *Rhabdostigma schlechteri* K. Schum.)

Shrub or tree, up to 5 m high. Leaves elliptic, with domatia on lower surface, apex acute to acuminate, base cuneate to broadly cuneate. Cymes axillary. Calyx lobes almost free to base, triangular. Corolla throat hairy, tube 4 mm long, lobes 6–7 mm long. Fruit a drupe. *Flowers white to cream; October to March.* Swamp forest and riverine woodland. *Codd & De Winter 5049.*

W S C N E

Lagynias E. Mey. (s. Afr.: 2 spp.)

8351060

Robyns. 1928. *Bull. Jard. bot. Etat Brux.* 11: 312–316.
Bullock. 1931. *Kew Bull.*: 274.

dryadum (S. Moore) Robyns

(= *Vangueria dryadum* S. Moore)

Small tree or shrub, up to 4 m high. Leaves 25 × 12 mm, ovate-oblong to sub lanceolate, discolorous, velvety pubescent, petiole 2–3 mm long. Cymes axillary, densely velvety pubescent, pedunculate. Corolla tube 5–6 mm long. Stigma 6 mm exserted. *Flowers white, cream or greenish; October to March.* Riverine bush; woodland, forest, hillsides. *Balsinhas 3585* (flowers), *Hemm 480* (fruit).

W S C N E

lasiantha (Sond.) Bullock

(= *L. discolor* E. Mey.,
= *Vangueria lasiantha* (Sond.) Sond.)

Small tree or shrub, up to 6 m high. Leaves 90 × 30 mm, oblong to ovate-oblong, discolorous, glabrous, petiole

5–10 mm long. Cymes axillary, sparsely pubescent, glabrescent, pedunculate. Corolla tube 3,0–3,5 mm long. Stigma 4 mm exserted. *Flowers yellow or green; November to December.* Open woodland. *Hutchinson 2127* (flowers), *Krynauw 1424* (fruit).

W S C N E

Leptactina Hook. f. (s. Afr.: 1 sp.)

8274000

Verdcourt. 1979. *Kew Bull.* 33: 491–493.

Bridson & Verdcourt. 1988. *F.T.E.A. Rubiaceae* (Part 2): 688–693.

delagoensis K. Schum. subsp. **delagoensis**

(= *L. benguelensis* non (Welw. ex Benth. & Hook. f.) Good)

Small tree or shrub, up to 12 m high. Leaf blade glabrescent to densely pubescent. Flowers opening in the evening. Corolla tube sparsely to densely silky outside. *Flowers white; September to December and in April.* Sandy flats. *Van der Schijff 971.*

W S C N E

Oldenlandia L. (s. Afr.: 14 spp.)

8136200

Bremekamp. 1952. *Verh. Kon. Ned. Akad. Wetensch., Afd. Natuurk., Sect. 2*, 48,2: 183–270.

Verdcourt. 1989. *F.Z.* 5,1: 120–142.

affinis (Roem. & Schult.) DC. subsp. **fugax** (Vatke)

Verdc.

(= *Hedyotis decumbens* Hochst.,
= *O. decumbens* (Hochst.) Hiern)

Erect, scrambling or trailing perennial herb, 0,2–1,2 m high. Leaves narrowly lanceolate, tapering acuminate. Flowers in lax divaricate paniculate inflorescence. Calyx lobes 4. Corolla tube 3,0–4,5 mm long. Capsule globose. *Flowers dark blue, blue-purple to deep violet; December to May.* Woodland, rocky hillsides, grassland, also disturbed places. *Meeuse 10350.*

W S C N E

capensis L.f. var. **capensis**

(= *Hedyotis capensis* (L.f.) Lam.)

Prostrate or ascending annual herb, (20–)80–220 mm tall. Flowers sometimes solitary at nodes or few in subsessile axillary fascicles, pedicels very short, 1–2(–4) mm long. Calyx lobes 4, 1 mm long or less. Corolla tube 0,6–0,9 mm long. Capsule obconic. *Flowers white, deep lilac, dull reddish, pink or lilac; December to March.* Riverbanks, cracks of rocks; grassland, roadsides. *Galpin 8851.*

W S C N E

cephalotes (Hochst.) Kuntze

(= *Hedyotis cephalotes* Hochst.)

Erect, ascending or decumbent annual or perennial herb. Leaves narrowly oblong-elliptic, sessile. Stipule lobe bifid to ± middle. Inflorescence capitate, terminal and in upper axils. Calyx lobes 4. Corolla tube 0,5 mm long. *Flowers white; September to March.* Grassland, in damp places. *Jacobsen 5401.*

W S C N E

corymbosa L. var. **caespitosa** (Benth.) Verdc.

(= *O. caespitosa* (Benth.) Hiern,
= *O. caespitosa* (Benth.) Hiern var. *major* Bremek.)

Annual herb, 20–300 mm tall, glabrous or obscurely pubescent or scabridulous. Flowers pedicellate, typically solitary at nodes, but sometimes 2- or 3-flowered cymes on reduced leafless branches. Calyx lobes 4. Corolla tube 0.6–1.0 mm long. Capsule ovoid, obscurely beaked. *Flowers white, tinged blue, pink or purple; November to April.* Damp, sandy places; forest edges, woodland; grassland; disturbed places. *Du Toit 161.*

W S C N E

geminiflora (Sond.) Kuntze

(= *Hedyotis geminiflora* Sond.)

Prostrate herb. Inflorescence axillary. Flowers 1–several at nodes, each solitary on its peduncle or only 2 or 3 per peduncle due to suppression of leaves near apex of shoot, pedicels mostly very short, 1–2(–4) mm long, flowers sometimes ± sessile at first. Calyx lobes 4, 3.0–3.5 mm long. Capsule ± subglobose or oblong. Sandy riverbeds. No specimens in PRE.

W S C N E

herbacea (L.) Roxb. var. **herbacea**

(= *Hedyotis herbacea* L.,
= *H. heynei* (G. Don) Sond.)

Erect annual herb, 0.15–0.60 m high. Flowers solitary or paired at nodes; distinctly pedicellate. Calyx lobes 4. Corolla tube 2.0–3.7 mm long. Capsule subglobose, markedly beaked. Calyx tube and capsule glabrous. *Flowers white, lilac or mauve, tube green; September to June.* Woodland, rocky areas, marshy grassland; disturbed places. *Herman 195.*

W S C N E

lancifolia (Schumach.) DC. var. **scabridula** Bremek.

Straggling or prostrate perennial herb. Inflorescence axillary, flowers 1–several at nodes, each solitary on its peduncle, 2 or 3 per peduncle at apex due to suppression of leaves. Calyx lobes 4. Corolla tube 1 mm long. Capsule broader than long, saccate at base. *Flowers white, sometimes tinged pink or purple; December to March.* Wet situations, e.g. riverbanks, spray-zone bogs near waterfalls. *Jacobsen 5494.*

W S C N E

muscosa Bremek.

Decumbent perennial herb. Leaves ovate to subspathulate, glabrous. Flowers solitary, axillary, pedicellate, pedicels 1.6–3.0 mm long. Calyx lobes 4. Corolla tube 3 mm long. *Flowers white; January to April and in July.* Cracks in rocks. *Hilliard & Burtt 5993.*

W S C N E

rosulata K. Schum. var. **rosulata**

Annual herb, 25–350 mm tall. Basal leaves rosulate, spatulate to elliptic, stem leaves filiform to linear-lanceolate. Flowers 1–3, terminal or axillary, pedicels very slender, 4–38 mm long. Calyx lobes 4. Corolla tube 1.2–3.6 mm long, somewhat hairy at throat. *Flow-*

ers white to pale purple; February to March. Grassland, wet situations. *Young 2348.*

W S C N E

rupicola (Sond.) Kuntze var. **rupicola**

(= *Hedyotis rupicola* Sond.,
= *O. rogersii* S. Moore)

Procumbent, mat-forming perennial herb. Stems glabrescent. Leaves elliptic-ovate to ovate. Flowers in lax terminal and lateral inflorescences. Calyx lobes 4. Corolla tube 2–7(–10) mm long, hairy in throat. Capsule subglobose. *Flowers white, pale blue, lilac or pink; October to July.* Woodland edges, forest clearings, grassland and on wet rocks. *Retief & Herman 72.*

W S C N E

tenella (Hochst.) Kuntze

(= *Hedyotis tenella* Hochst.)

Decumbent or hanging herb, intricately branched, with slender stems. Leaves elliptic or ovate. Flowers 1 or 2(3) terminal and axillary, pedicellate. Calyx lobes 4. Corolla tube 4–5 mm long, glabrous inside. Capsule obovoid. *Flowers white or pale violet; October to December and April to June.* Rock crevices in forest. *Kluge 1426.*

W S C N E

Otiophora Zucc. (s. Afr.: 2 spp.) 8450000

Puff. 1981. Jl S. Afr. Bot. 47: 310–321.

calycophylla (Sond.) Schltr. & K. Schum. subsp. **calycophylla**

(= *Anthospermum calycophyllum* Sond.,
= *O. hebe* Verdc.)

Dwarf shrub, (60–)100–300(–400) mm tall, with much-branched woody stems. Leaves small, (5–)7–13(–16) × (2.0–)2.5–5.0(–6.0) mm. Calyx lobes foliaceous, (2.2–)2.5–4.0 mm long. Corolla tubes distinctly filiform. *Flowers white, pale pink, mauvish pink to mauve; September to June.* Rock crevices on rock krantzies and cliffs. *Venter 416.*

W S C N E

calycophylla (Sond.) Schltr. & K. Schum. subsp. **verdcourtii** Puff

Perennial herb or undershrub, 260–400 mm tall, with few unbranched, herbaceous stems. Leaves larger, (14–)16–28 × 5–10 mm. Calyx lobes foliaceous, 3.8–5.5 mm long. Corolla tubes distinctly filiform. *Flowers pink, (pale) lilac or mauve; November to March and June to July.* (Rocky) grassland; often in sandy loam. *Codd 6864.*

W S C N E

cupheoides N.E. Br.

(= *O. densiflora* Baer,
= *O. hirsuta* Baer)

Perennial herb or dwarf shrub, 80–450(–600) mm tall. Leaves (9–)11–22(–36) × (3.5–)4.0–8.0(–13.0) mm. Calyx lobes foliaceous, (3.5–)4.0–8.0(–10.0) mm long.

Corolla tubes narrowly infundibuliform, throat glabrous. *Flowers white, sometimes tinged pink, reddish or faint purple in bud; July to June.* In cracks of rocks or depressions of flat rocks; rocky outcrops, rocky grassland. *Scheepers 846.*

W S C N E

Oxyanthus DC. (s. Afr.: 3 spp.) 8293000

Bridson. 1979. Kew Bull. 34: 113–127.

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 526–537.

speciosus DC. subsp. gerrardii (Sond.) Bridson
(= *O. gerrardii* Sond.)

Small tree or shrub, 2–6(–12) m high. Inflorescence many-flowered, pyramidal or less often narrowly pyramidal. Calyx lobes 1.00–1.25 mm long. Corolla tube 21–28(–40) mm long, lobes 9–12(–14) mm long. Fruit small, ellipsoid, 17–28(–35) mm long. *Flowers white; November to January.* Forest. *Stalmans 819* (flowers), *129* (fruit).

W S C N E

speciosus DC. subsp. stenocarpus (K. Schum.) Bridson
(= *O. stenocarpus* K. Schum.)

Small tree or shrub, 2–6(–12) m high. Corolla lobes (6–)10–18 mm long. Fruit short-fusiform to fusiform or less often ellipsoid, (25–)30–63 mm long. *Flowers white; December to January.* Forest. *Liebenberg 3069.*

W S C N E

Pachystigma Hochst. (s. Afr.: 10 spp.) 8359000

Robyns. 1928. Bull. Jard. bot. Etat Brux. 11: 117–131.

Robyns. 1937. Bothalia 3,2: 183–184.

Kok et al. 1989. S. Afr. J. Bot. 55,6: 560–563.

bowkeri Robyns

Small to medium-sized tree, up to 3 m high. Leaves glabrous, rarely hairy, chartaceous, ovate-rotund, (25–)65–145(–215) × (20–)30–70(–85) mm. Peduncle 2–8 mm long. Cymes 3–5-flowered. Calyx lobes elongated, 7–10 mm long. *Flowers pale green to greenish yellow; October.* Forest. *Van der Schijff 6276.*

W S C N E

coeruleum Robyns

Dwarf shrub, up to 300 mm tall. Leaves 30 × 10 mm, tomentose, rarely densely appressed pilose, elliptic. Cymes distinctly pedunculate, peduncles 3–5 mm long, 3–5-flowered. Calyx lobes 4.0–4.5 mm long, linear. *Rogers 20820.*

W S C N E

latifolium Sond.

(= *Vangueria latifolia* (Sond.) Sond.)

Dwarf shrub, up to 0.6 m high. Leaves elliptic to ovate, discolorous, glabrous, ± 95 × 60 mm; subsessile. Cymes 3-flowered, long-pedunculate, peduncle 10–25

mm long. Calyx lobes 5–6 mm long. *Flowers yellowish green; October to January.* Grassland in rocky/stony soil. *Scheepers 1036.*

W S C N E

macrocalyx (Sond.) Robyns
(= *Vangueria macrocalyx* Sond.)

Small tree or shrub, up to 2.5 m high. Leaves velvety, coriaceous, (20–)25–45(–50) × (15–)18–25(–30) mm, broadly elliptic to round. Peduncle 0–3 mm long. Calyx lobes 7–8 mm long, velvety. *Flowers greenish; November to December.* Savanna, rarely forest; rocky outcrops and ridges. *Codd 8108.*

W S C N E

pygmaeum (Schltr.) Robyns

(= *Vangueria pygmaea* Schltr.,

= *V. setosa* Conrath)

Perennial herb or dwarf shrub, up to 400 mm tall. Leaves linear-oblong, fulvous-pubescent, ± 40–80 × 30 mm. Cymes pedunculate, peduncles 5–6 mm long. Calyx lobes 4–5 mm long. *Flowers greenish yellow; August to February.* Grassland in rocky/stony soil. *Codd 10084.*

W S C N E

thamnus Robyns

Perennial herb or dwarf shrub, 50–70 mm tall. Leaves elliptic-lanceolate, glabrous, ± 50–80 × 15–30 mm. Cymes pedunculate, peduncles 4–8 mm long. Calyx lobes 4–5 mm long. *Flowers greenish, cream; October to January.* Grassland. *Cameron 387.*

W S C N E

triflorum Robyns

Tree or shrub, up to 5 m high. Leaves elliptic, ± 10–17 × 5–8 mm, tomentose. Cymes pedunculate, peduncle ± 3.5 mm long; 3-flowered. Calyx lobes 6–7 mm long, tomentose. *Flowers greenish yellow; October to January.* Rocky outcrops and ridges. *Codd 3447.*

W S C N E

venosum Hochst.

(= *Vangueria venosa* (Hochst.) Sond.)

Dwarf shrub, up to 500 mm tall. Leaves elliptic, ± 55 × 20 mm, glabrous. Cymes pedunculate, peduncles 5–8 mm long. Calyx lobes 5–6 mm long. *Flowers yellow-green; November to December.* Grassland. *Stalmans 1199.*

W S C N E

Paederia L. (s. Afr.: 1 sp.)

8430000

Puff. 1989. F.Z. 5,1: 63–65.

bojeriana (A. Rich.) Drake subsp. foetens (Hiern) Verdc.

(= *P. foetens* (Hiern) K. Schum.)

Climber, foetid-smelling, pubescent to velvety hairy. Leaves distinctly petiolate, blades elliptic to ovate, cordate or rounded at base. Inflorescence distinctly

pedunculate, condensed and many-flowered. Fruit elliptic in outline, strongly compressed, with persistent calyx lobes. *Flowers whitish to greenish yellow; March to April*. Scrub, woodland or forest, often riverine. *Codd 5344*.

W S C N E

Pavetta L. (s. Afr.: 21 spp.) 8383000

Bremekamp. 1934. *Reprim nov. Spec. Regni veg.* 37: 1–208.
Kok & Grobbelaar. 1984. *S. Afr. J. Bot.* 3,3: 185–187.
Herman *et al.* 1987. *S. Afr. J. Bot.* 53,1: 53–60.
Kok *et al.* 1987. *S. Afr. J. Bot.* 53,2: 147–154.
Bridson & Verdcourt. 1988. *F.T.E.A. Rubiaceae (Part 2)*: 619–686.

barbertonensis Bremek.

Shrub, up to 2 m high. Leaves rhomboid, very thin, pubescent, petiolate, bacterial nodules dot-shaped, near main vein in basal two-thirds of lamina. Calyx lobes filiform, 4–5 mm long. Corolla tube 11 mm long. *Flowers white; October to December*. Forest. *Thorncroft 1110*.

W S C N E

catophylla K. Schum.

Shrub, up to 2 m high. Leaves obovate, apex acuminate to rounded, glabrous or pubescent, subsessile, bacterial nodules both dot-shaped (scattered) and linear (along main vein). Calyx lobes foliaceous, 6–7 × 2,0–2,5 mm. Corolla tube 14 mm long. *Flowers white; November to February*. Rocky mountainsides, deep sandy soil, riverine bush or open woodland. *Codd & De Winter 5026*.

W S C N E

cooperi Harv. & Sond.

(= *P. haegarhii* Bremek.)

Shrub, up to 2 m high. Leaves rhomboid to broadly elliptic, pubescent, petiolate, bacterial nodules dot-shaped, close to main vein in lower two-thirds of lamina. Calyx lobes linear, 5–6 mm long. Corolla tube 10–15 mm long. *Flowers white; October to December*. Amongst rocks on rocky outcrops. *Codd 8095*.

W S C N E

edentula Sond.

Tree, up to 4,5 m high. Leaves large, elliptic to narrowly elliptic to lanceolate, glabrous, petiolate, bacterial nodules dot-shaped and scattered. Calyx cup-shaped or with 4 small teeth. Corolla tube 10–15 mm long. *Flowers white; October to May*. Rocky hills and mountainsides. *Codd 6096*.

W S C N E

eylesii S. Moore

Tree, up to 8 m high. Leaves large, rhomboid to ovate-elliptic, lower surface pubescent, petiolate, bacterial nodules dot-shaped and scattered. Calyx dentate, lobes up to 0,2 mm long. Corolla tube up to 10 mm long. *Flowers white; December to January*. Rocky hillsides. *Strey SKF 907*.

W S C N E

galpinii Bremek.

Shrub, up to 2 m high. Leaves elliptic to narrowly elliptic or narrowly oblanceolate, apex acuminate, petiolate, glabrous, bacterial nodules dot-shaped and scattered. Calyx lobes 0,7 mm long, obtuse to rounded. Corolla tube up to 15 mm long, lobes up to 12 mm long. *Flowers white; December to January*. Forest. *Van Jaarsveld 289*.

W S C N E

gardeniifolia A. Rich. var. gardeniifolia

(= *P. assimilis* Sond. var. *assimilis*,
= *P. assimilis* Sond. var. *glabra* Bremek.)

Small tree or shrub, 2(–4) m high. Leaves obovate, oblanceolate to broadly elliptic, apex acute, obtuse or rounded, glabrous to glabrescent, petiolate, bacterial nodules dot-shaped, scattered. Inflorescence branches and pedicels always glabrous. Calyx limb truncate or with short triangular lobes, 0,50–1,25 mm long. Corolla tube 4–15 mm long. *Flowers white or cream; October to February*. Bushland to forest, often on rocky ground. *Zantovska & Cribb 198*.

W S C N E

gardeniifolia A. Rich. var. subtomentosa K. Schum.

(= *P. assimilis* Sond. var. *pubescens* Bremek.,
= *P. heidelbergensis* Bremek.)

Small tree or shrub, 2–4 m high. Leaves and flowers as in var. *gardeniifolia* but leaves pubescent and inflorescence branches and pedicels sparsely to densely pubescent. *Flowers white or cream; November to April*. Dry rocky hillsides, in thickets or grassland. *Retief & Herman 170*.

W S C N E

gracilifolia Bremek.

(= *P. breyeri* Bremek.,
= *P. delagoensis* Bremek.)

Shrub, 0,3–3,0 m high. Leaves narrowly elliptic to elliptic, apex acute to obtuse, glabrous or pubescent, subsessile, bacterial nodules dot-shaped and scattered. Calyx lobes filiform to linear, 2,5–6,0 mm long. Corolla tube 12–20 mm long. *Flowers white; November to March*. Bush clumps. *Retief & Herman 19*.

W S C N E

harborii S. Moore

(= *P. marlothii* Bremek.)

Dwarf shrub, up to 500 mm tall. Leaves narrowly oblanceolate, apex acute, sessile, pubescent, bacterial nodules dot-shaped and scattered. Calyx lobes triangular, 0,5 mm long. Corolla tube 6–7 mm long. *Flowers white; November and February*. Deep sandy soil. *Codd 10000*.

W S C N E

inandensis Bremek.

(= *P. rattrayi* Bremek.)

Small to medium-sized tree, up to 4 m high. Leaves elliptic to narrowly elliptic, apex acute, glabrous, petiolate, bacterial nodules dot-shaped, scattered, petiole 5–15 mm long. Calyx lobes 0,2–0,5 mm long, apices

acute. Corolla tube 5–7 mm long. *Flowers white; September to January and in April.* In forest. *Hemm 361.*

W S C N E

kotzei Bremek.

Shrub, up to 2 m high. Leaves narrowly oblanceolate, apex acute to acuminate, glabrous, petiolate, bacterial nodules dot-shaped and scattered. Calyx lobes 0,8–1,5 mm long, apices obtuse to rounded. Corolla tube 8–11 mm long. *Flowers white; October to January.* In forest. *Van der Schijff 6194.*

W S C N E

lanceolata Eckl.

(= *P. alexandrae* Bremek.,
= *P. tristis* Bremek.)

Small tree or shrub, up to 3,5 m high. Leaves narrowly elliptic, subsessile, petiole 2–6 mm long, glabrous, bacterial nodules dot-shaped and scattered. Calyx lobes 0,2–0,5 mm long. Corolla tube 5–7 mm long. *Flowers white; September to January.* Forest margins, riverine bush. *Retief & Herman 115.*

W S C N E

schumanniana F. Hoffm. ex K. Schum.

Small tree or shrub, up to 4 m high. Leaves oblanceolate to obovate, apex rounded, pubescent, with prominent nerves below, petiolate, bacterial nodules dot-shaped, scattered. Calyx lobes triangular, 0,5–2,0 mm long. Corolla tube 5–11 mm long. *Flowers white; November to March.* Wooded grassland and woodland. *Balsinhas 3586.*

W S C N E

trichardtensis Bremek.

(= *P. hirtiflora* Bremek.,
= *P. zoutpansbergensis* Bremek.)

Shrub, up to 2 m high. Leaves elliptic to obovate, apex acuminate, glabrous or pubescent, thin, petiolate, bacterial nodules dot-shaped, scattered. Calyx lobes linear-lanceolate, up to 4 mm long. Corolla tube up to 15 mm long. *Flowers white; November to February.* Forest, forest margin or bushclumps. *Van Wyk 4277.*

W S C N E

zeyheri Sond.

(= *P. microlancea* K. Schum.,
= *P. middelburgensis* Bremek.,
= *P. pseudo-zeyheri* Bremek.)

Small tree or shrub, 2–3 m high. Leaves narrowly oblanceolate, apex rounded to obtuse, glabrous to pubescent, sessile, bacterial nodules dot-shaped and scattered. Calyx lobes triangular, 0,5–1,0 mm long. Corolla tube up to 10 mm long. *Flowers white; August to February.* Rocky outcrops or open flats. *De Winter 7800.*

W S C N E

Pentanisia Harv. (s. Afr.: 3 spp.) 8348000

Verdcourt. 1952 Bull. Jard. bot. Etat Brux. 22: 233–286.
Verdcourt. 1989 F.Z. 5,1: 57–63.

angustifolia (Hochst.) Hochst.

(= *P. variabilis* Harv. var. *glaucescens* Cruse ex Sond.)

Erect straggling or prostrate perennial herb, 0,2–0,6 m high. Leaves linear to lanceolate or oblong, 19–150 × 2,0–9,5 mm, glabrous or margins ciliate. Main inflorescence terminal, spicate in fruit. Ovary 2-locular. *Flowers blue or violet-blue; August to April.* Herb layer of woodland. *Van Wyk 791.*

W S C N E

prunelloides (Klotzsch ex Eckl. & Zeyh.) Walp. subsp.

prunelloides

(= *P. variabilis* Harv. var. *intermedia* Sond.)

Erect or semiprostrate perennial herb, 0,07–0,60 m high. Leaves oblong, usually hairy, 17–75 × 3–28 mm. Main inflorescence terminal, capitate. Ovary 2-locular. *Flowers bright blue; July to June.* Rocky soil. *Mauve 5463.*

W S C N E

prunelloides (Klotzsch ex Eckl. & Zeyh.) Walp. subsp.

latifolia (Hochst.) Verdc.

(= *P. variabilis* Harv. var. *latifolia* (Hochst.) Sond.)

Erect or semiprostrate perennial herb, 0,07–0,60 m high. Leaves broadly ovate to round, or less often oblong, 16–85 × 11–35 mm, base rounded or slightly cordate, usually densely hairy. Inflorescence as in subsp. *prunelloides*. Ovary 2-locular. *Flowers bright blue; August to January and in April.* Woodland, grassy places. *Codd & De Winter 3301.*

W S C N E

sykesii Hutch. subsp. **otomerioides** Verdc.

Spreading or prostrate perennial herb, 80–300(–400) mm tall. Leaves lanceolate, narrowly elliptic, elliptic-oblong or oblanceolate, 6,5–60,0 × 2–15 mm; glabrous, lateral nerves obsolete or visible only with difficulty. Inflorescence capitate or spicate. Ovary 3–5-locular. *Flowers blue or rarely white; December and June.* Grassland, roadsides. *Smuts & Gillett 3242.*

W S C N E

Pentas Benth. (s. Afr.: 2 spp.)

8154000

Verdcourt. 1989. F.Z. 5,1: 72–75.

angustifolia (A. Rich. ex DC.) Verdc.

(= *P. transvaalensis* Baer,
= *P. woodii* Scott-Elliot)

Perennial herb, 0,3–1,0 m high. Leaves narrowly lanceolate. Inflorescence capitate in flower, becoming spicate and laxer in fruit. Corolla tube (10–)14–18 mm long. *Flowers white; December and January.* Woodland, in rocky places, granite koppies, wooded grassland. *Rogers 22230.*

W S C N E

Pentodon Hochst. (s. Afr.: 1 sp.)

8136180

Verdcourt. 1989. F.Z. 5,1: 116–118.

pentandrus (Schumach. & Thonn.) Vatke var. **minor** Bremek.(= *Hedyotis pentamera* Sond.)

Decumbent or procumbent, annual or short-lived perennial herb. Flowers heterostylous, some with style included and anthers exserted and others vice versa. Corolla tube (2,5–)3,0–4,0 mm long, usually distinctly funnel-shaped and with wide throat—up to 4 mm wide. Flowers white, pink, pale to deeper blue or pale mauve, tube often pale yellow; October to March. Near pools, grass and sedge associations, along rivers and in riverbeds. Codd 5352.

W S C N E

Plectroniella Robyns (s. Afr.: 2 spp.) 8352010

Robyns. 1928. Bull. Jard. bot. Etat Brux. 11: 243–246.

Bremekamp. 1933. Ann. Transv. Mus. 15: 258.

Herman. 1991. Flower. Pl. Afr. 51,2: t. 2029.

armata (K. Schum.) Robyns(= *Vangueria armata* K. Schum.,= *Plectronia ovata* Burt Davy)

Small tree or shrub, 1–5(–8) m high, armed. Leaves elliptic, oblong to ovate or cordate to rounded, glabrous to pubescent, shortly petiolate. Inflorescence umbellate, pedunculate, many-flowered. Throat of corolla villous. Flowers white, cream, greenish or pale yellow; November to May. Hillsides, rocky ridges, sandy flats, riverbanks and dry watercourses. Meeuse 10297 (flowers), Herman 775 (fruit).

W S C N E

capillaris Bremek.

Shrub, 1–2 m high. Branches slender; thorns shorter and leaves larger and more herbaceous. Peduncles filiform. Flowers white; January. Mountainsides. Bremekamp & Schweickerdt 277 (type only—perhaps only form of *P. armata*).

W S C N E

Psychotria L. (s. Afr.: 2 spp.) 8399000

Verdcourt. 1989. F.Z. 5,1: 9–17.

capensis (Eckl.) Vatke subsp. **capensis** var. **capensis**(= *Grumilea capensis* (Eckl.) Sond.,= *G. capensis* (Eckl.) Sond. var. *angustifolia* Sond.)

Small tree or shrub, 1–5(–20) m high. Leaves narrowly obovate to oblanceolate or oblong-elliptic, rounded to acuminate at apex, glabrous. Stipules 3–8 mm long, triangular to ovate-triangular. Flowers in much-branched panicles, distinctly pedicellate, pedicels very distinct in fruit. Fruits with abaxial surface not ribbed. Flowers cream or yellow; July to March. Riverine and other evergreen forest. Codd & Dyer 9151.

W S C N E

zombamontana (Kuntze) Petit(= *Grumilea kirkii* Hiern,= *Uragoga zombamontana* Kuntze)

Tree or shrub, 1,5–9,0 m high. Leaves elliptic to elliptic-oblanceolate, oblanceolate or very narrowly ob-

long-elliptic, apex acute to acuminate, glabrous. Stipules 5–17 mm long, elliptic or oblong. Inflorescence much-branched. Pedicels obsolete or up to 1 mm long, up to 9 mm in fruit. Fruit conspicuously ribbed abaxially. Flowers pale yellow or white; November to January. Evergreen forest including montane forest, ravine forest, forested rocky kloofs. Meeuse 9421.

W S C N E

Psydrax Gaertn. (s. Afr.: 4 spp.) 8352030

Bridson. 1985. Kew Bull. 40,4: 687–711.

livida (Hiern) Bridson(= *Canthium huillense* Hiern,= *C. lividum* Hiern,= *Plectronia livida* (Hiern) K. Schum.)

Tree or shrub, up to 4 m high. Leaves deciduous, leaf blades 15–130 mm long, base obtuse to rounded or rarely subcordate, chartaceous to subcoriaceous, dull above, pubescent or glabrous, lateral nerves in 3–5 main pairs. Stipules triangular, acuminate. Inflorescence clearly pedunculate. Corolla lobes 1,25–2,00 mm long. Fruit ovate, scarcely indented at apex. Flowers white; September to January and in April. Rocky hillsides, riverine bush. Van Vuuren 1548 (flowers), Herman 200 (fruit).

W S C N E

locuples (K. Schum.) Bridson(= *Canthium locuples* (K. Schum.) Codd,= *Plectronia locuples* K. Schum.)

Tree, up to 4 m high. Leaves not deciduous, leaf blades 20–47 × 9–27 mm, obtuse at apex, subcoriaceous to coriaceous, glabrous, shiny above, distinctly petiolate, lateral nerves 2 or 3(4) main pairs. Stipules with triangular base terminating in a lobe, often decurrent and keeled. Inflorescence pedunculate but branches compact and reduced. Pedicels pubescent. Corolla tube 1,50–2,75 mm long, pubescent inside but hairs not in well defined ring. Fruit broader than long or longer than broad. Flowers white; November to December and in April. Forest, riverine bush. Khorombi 891.

W S C N E

obovata (Eckl. & Zeyh.) Bridson subsp. **obovata**(= *Canthium obovatum* Eckl. & Zeyh.)

Tree or shrub, up to 2 m high. Leaves not deciduous, broadly obovate to rounded, apex obtuse to rounded, coriaceous, domatia glabrous, lateral nerves 2 (or 3) pairs. Inflorescence pedunculate, branches moderately lax. Pedicels glabrous. Corolla tube 2,00–3,25 mm long, lobes 2,75–4,50 mm long. Flowers white; January. Forest margin, rocky mountainsides. Mogg 24556.

W S C N E

obovata (Eckl. & Zeyh.) Bridson subsp. **elliptica** Bridson

Tree or shrub, 4–5 m high. Leaf blades elliptic, apex acute, more chartaceous, domatia hairy, lateral nerves 3 or 4 pairs. Inflorescence and flowers as in subsp. *obovata*. Flowers white; November to January. Forest,

forest margins or bushveld. *Kluge 1141* (flowers), *Herman 726* (fruit).

W S C N E

Pygmaeothamnus Robyns (s. Afr.: 2 spp.) 8351020

Robyns. 1928. Bull. Jard. bot. Etat Brux. 11: 29–37.

chamaedendrum (*Kuntze*) Robyns var. **chamaedendrum**

(= *Fadogia humilis* J.M. Wood & M.S. Evans,
= *Pachystigma humilis* Bews)

Dwarf shrub, 50–100 mm tall. Leaves opposite, 80 × 20 mm, glabrous. Cymes simple, peduncle 5 mm long. Throat of corolla densely villous. *Flowers greenish; September to December*. Grassland. *Pott 15153* (flowers), *De Winter 7827* (fruit).

W S C N E

chamaedendrum (*Kuntze*) Robyns var. **setulosus** Robyns

(= *P. pilosus* Robyns,
= *P. longipes* Robyns)

Dwarf shrub, 50–100 mm tall. Same as var. *chamaedendrum* but leaves white setulose. *Flowers greenish; October to January*. Grassland. *Codd 5635* (flowers), *Welman 474* (fruit).

W S C N E

zeyheri (*Sond.*) Robyns var. **zeyheri**

(= *Pachystigma zeyheri* Sond.,
= *Vangueria zeyheri* (Sond.) Sond.)

Dwarf shrub, up to 200 mm tall. Leaves ternate, 100–120 × 30–45 mm, glabrous. Cymes much-branched, multi-flowered, peduncle 15 mm long. Throat of corolla villous to glabrous. *Flowers white or greenish; September to January*. Sandy flats or rocky outcrops. *Gerstner 5537* (flowers), *Van Hoepen 1639* (fruit).

W S C N E

zeyheri (*Sond.*) Robyns var. **rogersii** Robyns

Dwarf shrub, up to 200 mm tall. Same as var. *zeyheri* but leaves hairy. *Flowers white or greenish; September to November*. Sandy flats or rocky outcrops. *Codd 10117*.

W S C N E

Pyrostria Comm. ex Juss. (s. Afr.: 1 sp.) 8355000

Bridson. 1987. Kew Bull. 42,3: 623–630.

hystrix (*Bremek.*) Bridson

(= *Dinocaulium hystrix* Bremek.)

Small tree or shrub, up to 2.5 m high. Lateral branches decussate, frequently reduced to spurs, sometimes spine-like. Leaves narrowly obovate or elliptic, 6–35(–45) mm long. Corolla tube ± 1.5 mm long. Fruit 5–7 mm. *Flowers yellowish; October to February*. Rocky ridges; bushveld. *Venter 10684*.

W S C N E

Richardia L. (s. Afr.: 4 spp.)

8464000

Lewis & Oliver. 1974. Brittonia 26: 271–301.
Verdcourt. 1989. F.Z. 5,1: 190–193.

brasiliensis Gomes*

(= *Richardsonia brasiliensis* (Gomes) Hayne)

Prostrate annual or perennial herb. Leaf blades with upper surface hairy. Cocci with smooth depressed area of inner face almost as broad as face, outer surface papillose and ± strigose. *Flowers (5)6-merous; white often tinged pink; September to June*. Grassy roadsides, weed in gardens and cultivations. Native to South America. *Codd & De Winter 4924*.

W S C N E

humistrata (*Cham. & Schltdl.*) Steud.*

(= *Richardsonia humistrata* Cham. & Schltdl.)

Prostrate perennial herb. Leaves hispid and whitish. Flowers tetramerous. Cocci with inner face broad, outer surface glabrous or sparingly scabrous. *Flowers white; March*. Garden weed and weed in cultivations. Native to South America. *Loots B*.

W S C N E

scabra L.*

(= *Richardsonia scabra* (L.) A. St.-Hil. p.p.)

Erect or ascending annual or perennial herb, 50–550 mm tall. Leaf blades with upper surfaces practically glabrous except near margins. Flowers 6-merous. Cocci with smooth depressed area of inner face very narrow. *Flowers white or pale pink or mauve or only tips of lobes tinged pink; September and May*. Roadsides, weed on agricultural land. Native to South America. *Turner 76*.

W S C N E

Rothmannia Thunb. (s. Afr.: 3 spp.) 8285010

Bridson. 1984. Kew Bull. 39,1: 67–72.

Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 511–519.

capensis Thunb.

(= *Gardenia rothmannia* L.f.)

Tree, up to 10 m high. Calyx limb never splitting, lobes linear, (5–)10–22 mm long, always separated by sinuses. Corolla tube campanulate to funnel-shaped above, lower cylindrical portion a third to half of total length, lobes 27–35 mm long. Fruit spherical, ribbed. *Flowers white to cream with purple spots in throat; October to April*. Hillsides and mountainsides; often in forest or bush clumps. *Onderstall 1010*.

W S C N E

fischeri (*K. Schum.*) Bullock subsp. **fischeri**

(= *Randia fischeri* K. Schum.)

Small tree or shrub, 3.4–8.0 m high. Calyx limb frequently splitting, lobes 1–9(–18) mm long. Corolla tube gradually funnel-shaped or narrowly cylindrical below then funnel-shaped above, lobes 18–25 mm long. Fruit spherical, 30–60 mm in diameter. *Flowers cream with red or purple spots at throat; October to*

May. Rocky hillsides in thickets or forest patches. Westphal 3 (flowers), Codd 6905 (fruit).

W S C N E

globosa (Hochst.) Keay
(= *Gardenia globosa* Hochst.)

Small tree or shrub, up to 8 m high. Flowers up to 4 in fascicles. Corolla tube 20–35 mm long, cylindrical part scarcely extending beyond calyx limb, campanulate above. *Flowers white to cream with dark spots in throat; August to November and in April.* Forest. Hemm 234 (flowers), Venter 10678 (fruit).

W S C N E

Rubia L. (s. Afr.: 3 spp.) 8489000
Puff. 1986. F.S.A. 31,1,2: 61–65.

cordifolia L. subsp. **conotricha** (Gand.) Verdc.
(= *R. conotricha* Gand.)

Perennial herb, climber or scrambler. Leaves in whorls of 4 (very rarely 3 or 5), blades with 5 (7, very rarely 3) prominent veins, lanceolate to broadly ovate, rounded to cordate at base. *Flowers greenish, yellowish green to yellow; December to May.* Forest edges, in clearings and scrub. Scheepers 973.

W S C N E

horrida (Thunb.) Puff
(= *Galium horridum* Thunb.,
= *R. petiolaris* DC. var. *heterophylla* Sond.)

Perennial herb, climber or scrambler. Leaves in whorls of 6–8(–12), lanceolate, linear-lanceolate to linear, only midvein prominent, mostly narrowed to base. *Flowers greenish, yellowish green to yellow; November to April.* Bush clumps, scrub, open woodland or riverbanks. Scheepers 1488.

W S C N E

Sericanthe Robbr. (s. Afr.: 1 sp.) 8308020
Robbrecht. 1978. Bull. Jard. bot. nat. Belg. 48: 3–78.
Robbrecht. 1988. F.T.E.A. Rubiaceae (Part 2): 566–569.

andongensis (Hiern) Robbr. var. **andongensis**
(= *Neorosea andongensis* (Hiern) Halle,
= *Tricalysia andongensis* Hiern)

Small tree or shrub, 1.5–6.0 m high. Leaf blade acute or with an acumen 1–3(–6) mm long, lower surface with only the nerves pubescent and surface between nerves glabrous or nearly so. Flowers usually appearing before leaves. Corolla tube ± as long as or longer than lobes and distinctly exceeding tip of calyx limb. Style pubescent or glabrous. *Flowers white; April to November.* Deciduous woodland; riverine forest. Hardy & Wells 375 (flowers), Mogg 28281 (fruit).

W S C N E

Spermacoe Gaertn. (s. Afr.: 5 spp.) 8475000
Verdcourt. 1989. F.Z. 5,1: 165–188.

natalensis Hochst.

(= *Borreria natalensis* (Hochst.) S. Moore,
= *Diodia natalensis* (Hochst.) J.G. García)

Erect, ± glabrous, prostrate or trailing perennial herb, 150–550 mm tall. Leaf blades linear, elliptic or oblong-elliptic to narrowly elliptic-lanceolate. Flowers in small clusters at most nodes, 1-sided because in 1 axil of each node. Calyx lobes 1.0–1.8 mm long. Corolla tube 1 mm long. Capsule ± glabrous. *Flowers white tinged pink; July and October to March.* Grassland, by roadsides and as weed in cultivations. Retief 2122.

W S C N E

senensis (Klotzsch) Hiern

(= *Borreria scabra* non (Schumacher & Thonn.) K. Schum.,
= *B. squarrosa* Schinz)

Erect or straggling annual herb, (0.03–)0.16–0.60 m high. Stems and leaves pubescent. Leaf blades narrowly elliptic to elliptic-lanceolate. Flowers in clusters at nodes. Calyx lobes 2–4 mm long. Corolla tube 3–8 mm long. *Flowers white sometimes with mauve streaks; November to April.* Grassland, bushland, clearings, edges of pans and rivers; weed of disturbed places. Retief 732.

W S C N E

Tapiphyllum Robyns (s. Afr.: 1 sp.) 8351030
Robyns. 1928. Bull. Jard. bot. Etat Brux. 11: 101–116.

parvifolium (Sond.) Robyns
(= *Vangueria parvifolia* Sond.)

Small tree or shrub, up to 6 m high. Flowers in dense axillary fascicles, subsessile, tomentose. Leaves sessile or petiole 2–3 mm long, lamina round to subovate, tomentose. *Flowers green or yellowish green; September to March.* Rocky hillsides or outcrops. Acocks 13902 (flowers), Codd & Dyer 9129 (fruit).

W S C N E

Tarenna Gaertn. (s. Afr.: 8 spp.) 8278000
Bridson. 1979. Kew Bull. 34: 377–402.
Bridson & Verdcourt. 1988. F.T.E.A. Rubiaceae (Part 2): 584–603.

littoralis (Hiern) Bridson
(= *Enterospermum littorale* Hiern)

Small tree or shrub, 1.0–9.6 m high. Leaves distinctly petiolate, domatia conspicuous, blades rounded to obtuse at apex, petioles 4–14 mm long. Inflorescence terminal, frequently with additional pairs of axillary inflorescences arising from next 1 or 2 (or 3) nodes down. *Flowers whitish; August and November.* Sandveld. Van Wyk 4765.

W S C N E

supra-axillaris (Hemsl.) Bremek. subsp. **barbertonensis**
(Bremek.) Bridson
(= *T. barbertonensis* (Bremek.) Bremek.)

Small tree or shrub, 1.5–6.7 m high. Very young branches usually with pale grey to fawn bark. Leaf

blades very narrowly elliptic to narrowly elliptic, 7–19(–31) mm wide. Inflorescence axillary, trichotomously branched; bracteoles $\pm$ cupular, surrounding base of calyx tube. *Flowers whitish; October to December and in March.* Forest, bush clumps and rocky outcrops. *Onderstall 1078.*

W S C N E

zimbabwensis Bridson

(= *Enterospermum rhodesiacum* Bremek.)

Large shrub or tree, up to 10 m high. Leaves distinctly petiolate, 12–25 mm long. Domatia conspicuous; leaf blades acute to acuminate at apex. Inflorescence terminal, frequently with additional pairs of axillary inflorescences arising from next 1 or 2 (or 3) nodes down. *Flowers cream or white; November to December and in May.* Forest, forest edges or rocky outcrops. *Venter 12246.*

W S C N E

zygoon Bridson

(= *Zygoon graveolens* Hiern)

Shrub, up to 2 m high. Leaves immature at time of flowering. Inflorescence with branches and pedicels very reduced, terminal on short leafless spurs. Tubular part of calyx limb often rather reduced. *Flowers white; November to December and in May.* Sandveld. *Venter 9932.*

W S C N E

Tricalysia A. Rich. (s. Afr.: 7 spp.) 8308000

Robbrecht. 1979. Bull. Jard. bot. nat. Belg. 49: 239–360.

Robbrecht. 1985. S. Afr. J. Bot. 51: 331–334.

Robbrecht. 1987. Bull. Jard. bot. nat. Belg. 57: 180–189.

capensis (Meisn. ex Hochst.) Sim var. **capensis**

(= *Bunburya capensis* Meisn. ex Hochst.)

Tree, (1–)2–5 m high. Leaf blades (1,5–)2,0–3,0(–3,2) times as long as wide, mostly wider than 15 mm; tuft domatia abundantly present. Flowers 6-merous. Calyx cupular, shortly toothed, often showing deep splits after opening of flowers. Corolla throat glabrous. Fruits red. *Flowers white to cream; September.* Mist belt forest. *Hemm 284.*

W S C N E

capensis (Meisn. ex Hochst.) Sim var. **galpinii** (Schinz)

Robbr.

(= *T. galpinii* Schinz)

Small tree or shrub, 0,5–2,5(–4,0) m high. Same as var. *capensis* but tuft domatia absent, rarely occurring in small numbers (1 or 2 per blade) on a minority of the leaves. *Flowers white or cream; April to October.* Mountainsides and hillsides, open vegetation. *Stalmans 674* (flowers), *1278* (fruit).

W S C N E

capensis (Meisn. ex Hochst.) Sim var. **transvaalensis**

Robbr.

Small tree or shrub, 1–5(–7) m high. Same as var. *capensis* but leaf blades (2,5–)3,5–5,0 times as long as wide, narrower than 15 mm. Tuft domatia abundantly

present. *Flowers white or creamy; April to October.* Mountain forest. *Kerfoot 8686.*

W S C N E

junodii (Schinz) Brennan var. **junodii**

(= *T. allenii* (Stapf) Brennan var. *australis* (Schweick.) Brennan)

Small tree or shrub, 0,5–4,0 m high. Most leaf bases cordate or rounded; blades glabrous except nerves, rarely with some sparse hairs between nerves. Bracteoles of most flowers free and alternate, mostly 2, rarely 1 or 0. Flowers 5-merous. Calyx with short tooth and distinct triangular to rounded lobes, margins of calyx lobes separated by a sinus. Corolla throat with dense tuft of hairs. Fruits first white, finally blackish. *Flowers white, cream or pink; September to November and in April.* Woodland, scrub and dry forests, on sandy or rocky soil. *Pienaar 324.*

W S C N E

junodii (Schinz) Brennan var. **kirkii** (Hook. f.) Robbr.

(= *T. allenii* (Stapf) Brennan var. *kirkii* (Hook. f.) Brennan)

Small tree or shrub, 0,5–4,0 m high. As in var. *junodii* but leaf blades velutinous or hairy underneath. *Flowers white, cream or pink; September to February.* Woodland and thickets. *Codd & Dyer 4659.*

W S C N E

lanceolata (Sond.) Burtt Davy

(= *Kraussia lanceolata* Sond.)

Small tree or shrub, 2–6 m high. Bracteoles of most flowers fused into a cup, if free then opposite. Flowers 5-merous. Calyx consisting of short tube and distinct broadly triangular to rounded lobes, overlapping irregularly. Corolla throat with dense tuft of hairs. Fruits first white, finally blackish. *Flowers white; September to December.* Forest, forest margin and scrubs. *Jordaan 10* (flowers), *Herman 725* (fruit).

W S C N E

Vangueria Juss. (s. Afr.: 6 spp.) 8351000

Robyns. 1928. Bull. Jard. bot. Etat Brux. 11: 273–311.

Verdcourt. 1981. Kew Bull. 36: 547–556.

cyanescens Robyns

Small tree or shrub, up to 4 m high. Leaves 65 × 40 mm, glabrous. Calyx lobes triangular-oblong, obtuse, 1,5 mm long. Corolla glabrous outside, throat densely villous. Fruit 20 mm in diameter. *Flowers greenish; September to December.* Open woodland, shrubland, riverine bush. *Onderstall 1136* (flowers), *Wells 2017* (fruit).

W S C N E

infausta Burch. subsp. **infausta**

(= *V. tomentosa* Hochst.)

Tree, up to 5 m high. Leaves 40–300 × 25–180 mm, densely pubescent to velvety. Flowers in shortly pedun-

culate inflorescence exceeding 10 mm, buds rounded at apex. Calyx lobes triangular-oblong to narrowly oblong, 1,5(–2,0)mm long. Corolla densely spreading hairy outside. Fruit up to 35 mm in diameter. *Flowers greenish to greenish white, cream or yellowish; September to April*. Rocky outcrops on hillsides; riverine bush, bushveld. *Hanekom 1908* (flowers), *Herman 142* (fruit).

W S C N E

madagascariensis J.F. Gmel.(= *V. floribunda* Robyns)

Small tree or shrub, up to 5 m high. Leaves glabrous or almost so. Flowers in shortly pedunculate inflorescence exceeding 10 mm. Calyx lobes triangular-oblong to narrowly oblong, 1,5(–2,0) mm long. Corolla glabrous, occasionally somewhat pubescent. *Flowers greenish; November*. Rocky outcrops and hillsides. *Thorncroft 1165*.

W S C N E

RUTACEAE

Trees, shrubs or shrublets, rarely herbs, most parts gland-dotted, aromatic when crushed. Leaves alternate or opposite, without stipules. Flowers regular; disc present between stamens and ovary. Petals 4 or 5, free. Stamens 4 or 5, or up to 10. Ovary superior, with 4 or 5 lobes. Fruit a berry, drupe or capsule.

Key after Dyer, Gen. 1: 287–288 (1975).

- 1a Leaves simple; tree with large, pink flowers **Calodendrum**
- 1b Leaves compound, pinnate or (1)3–5-foliolate; mainly trees or large shrubs 2
- 2a Shrub or undershrub, aromatic; stamens 8 **Thamnosma**
- 2b Trees or large shrubs 3
- 3a Leaves pinnate 4
- 3b Leaves (1)3(–5)-foliolate 5
- 4a Flowers unisexual; stamens 4; fruit a globose capsule; armed with spines **Zanthoxylum**
- 4b Flowers bisexual; stamens 8 or 10; fruit baccate; unarmed **Clausena**
- 5a Carpels (2)–4, united at base only, but sometimes cohering above **Oricia**
- 5b Carpels 1–7, united for full length 6
- 6a Scrambling shrubs; aculeate; flowers 5-merous; fruit 5–7-seeded **Toddalia**
- 6b Trees or shrubs; unarmed; flowers 4(5)-merous; fruit 1–4-seeded 7
- 7a Stamens 4 or 5; ovary 1-locular; style short, stigma peltate **Teclea**
- 7b Stamens (6 or 7)8; ovary 2–4-locular 8
- 8a Ovary smooth; style short; stigma peltate **Vepris**
- 8b Ovary verrucose; style 0; stigma 4-lobed **Toddaliopsis**

Calodendrum Thunb. (s. Afr.: 1 sp.) 4035000

Mendonça. 1963. F.Z. 2: 181.

capense (L.f.) Thunb.(= *Dictamnus capensis* L.f.)

Tree, up to 20 m high. Leaves elliptic to broadly elliptic, 60–130(–180) × 35–75(–110) mm. Stamens 5, alternating with 5 petaloid staminodes. Staminodes narrowly oblanceolate, caudate, dotted with bright crimson glands. Fruit a 5-lobed, rugose, warty capsule. *Flowers pink; September to March*. Forest. *Codd & Dyer 9193*.

W S C N E

Clausena Burm. f. (s. Afr.: 1 sp.) 4091000

Mendonça. 1963. F.Z. 2: 191–193.

anisata (Willd.) Hook. f. ex Benth.(= *C. inaequalis* (DC.) Benth.)

Shrub or small tree, up to 10 m high. Leaves imparipinnate, leaflets alternate, ovate or elliptic, base asym-

metric, apex emarginate, margin crenulate, densely gland-dotted. *Flowers dull white; August to November*. Forest margins. *Hemm 254*.

W S C N E

Oricia Pierre (s. Afr.: 3 spp.) 4070000

Verdoorn. 1926. Kew Bull. 1926: 411–415.

Coates Palgrave. 1977. Trees of southern Africa: 346.

bachmannii (Engl.) I. Verd.

Tree, up to 15 m high. Leaves 3-foliolate, leaflets oblong, 70–150 × 30–70 mm. Fruit fleshy, oblong, ± 20 mm long, gland-dotted. *Flowers creamy white; August to November*. Evergreen forest. *Burt Davy 1163*.

W S C N E

Teclea Delile (s. Afr.: 4 spp.) 4085000

Verdoorn. 1926. Kew Bull. 1926: 401–410.

Mendonça. 1963. F.Z. 2: 205–209.

natalensis (Sond.) Engl.
(= *Toddalia natalensis* Sond.)

Glabrous shrub or tree, up to 8 m high. Leaves 1-, 2- and 3-foliolate on the same plant, leaflets usually drooping and folding along midrib. *Flowers greenish white; August to September.* Forest. *Nel 194.*

W S C N E

pilosa (Engl.) I. Verd.

Shrub. Leaflets hairy on both surfaces, cuneate at base, petioles very narrowly winged. Fruit ellipsoid-globose, 7 × 5 mm, glabrescent, brown. Woodland. *Van der Schijff 3408.*

W S C N E

Thamnosma Torr. & Frém. (s. Afr.:
2 spp.) 4014000

Mendonça. 1963. F.Z. 2: 183.

africana Engl.

Shrublet, up to 0,6 m high, with pellucid gland-dots on all parts. Leaves 3-foliolate, leaflets sessile, narrowly oblanceolate. Fruit semifleshy. *Flowers yellow, dark red to purple outside; November to April.* Grassland, woodland. *Codd 10408.*

W S C N E

Toddalia Juss. (s. Afr.: 1 sp.) 4077000

Mendonça. 1963. F.Z. 2: 197–199.

asiatica (L.) Lam.
(= *T. aculeata* Pers.)

Climber or scrambler. Branches with small recurved prickles. Leaves 3-foliolate, petiole grooved above, leaflets with midribs prominent on lower surface and occasionally aculeolate. *Flowers yellow; December to March.* Scrub forest, woodland. *Story 1880.*

W S C N E

Toddaliopsis Engl. (s. Afr.: 1 sp.) 4078000

Mendonça. 1963. F.Z. 2: 205.

bremekampii I. Verd.

Shrub or small, evergreen tree, up to 6 m high. Leaves 3-foliolate, leaflets elliptic or oblong-elliptic, 35–80 × 12–35 mm, secondary nerves slightly raised above. Fruit 14 mm in diameter, densely verrucose, reddish brown. *Flowers yellowish green; October to November.* Bushveld, woodland, sandy soil. *Obermeyer et al. 66.*

W S C N E

Vepris Comm. ex A. Juss. (s. Afr.:
5 spp.) 4076000

Verdoorn. 1926. Kew Bull. 1926: 394–400.
Mendonça. 1963. F.Z. 2: 199–205.

carringtoniana Mendonça

Deciduous shrub, up to 3 m high. Leaves 3-foliolate, petiole winged, leaflets sessile, elliptic or obovate, 15–40 × 6–15 mm, densely dotted with glands, conspicuously veined on both surfaces. *Flowers yellow; November.* Lowveld. *Tinley 3058.*

W S C N E

lanceolata (Lam.) G. Don
(= *Toddalia lanceolata* Lam.,
= *V. undulata* (Thunb.) I. Verd. & C.A. Sm., nom. illegit.)

Evergreen shrub or small tree, up to 5 m high. Leaves 3-foliolate, leaflets narrowly elliptic, 50–120 × 15–32 mm, apex acute or obtuse, margin undulate. Fruit 4-lobed, 4–5 mm in diameter. *Flowers yellowish green; November to December.* Bushveld, forest, ravines, humic soil. *Hemm 548.*

W S C N E

reflexa I. Verd.

Shrub or small tree, up to 6 m high. Leaves 3-foliolate, petiole 10–30 mm long, terete, leaflets narrowly elliptic, 30–80 × 10–40 mm, leathery, gland-dotted, venation conspicuous. Fruit ellipsoidal, fleshy, 12 mm long. *Flowers greenish yellow; September to December.* Deciduous woodland, wooded grassland. *Coetzee 1250.*

W S C N E

Zanthoxylum L. (s. Afr.: 6 spp.) 3991000

Mendonça. 1963. F.Z. 2: 183–190.
Waterman. 1975. Taxon 24: 363.

capense (Thunb.) Harv.
(= *Fagara capensis* Thunb.,
= *Fagara magalismontana* Engl.)

Tree or shrub, up to 13 m high. Leaflets usually obtuse or rounded at apex, ovate to elliptic or obovate with 4–8 pairs of primary lateral nerves. Inflorescence bearing flowers of one sex only. *Flowers greenish yellow; September to March.* Bushveld, woodland, sandy soil, rocky places. *Stalmans 1043.*

W S C N E

davyi (I. Verd.) P.G. Waterman
(= *Fagara davyi* I. Verd.)

Tree, up to 30 m high. Leaflets acute or acuminate and slightly retuse at apex, lanceolate to oblong or narrowly elliptic with 16–20 or more pairs of primary lateral veins. Flowers 4-merous, in terminal panicles. *Flowers creamy white; October to December.* Forest, forest patches. *Hemm 301.*

W S C N E

humile (E.A. Bruce) P.G. Waterman
(= *Fagara humilis* E.A. Bruce)

Shrub, up to 2 m high. Spines, when present, down-curved. Rhachis of leaves on sterile and fertile shoots pubescent. Flowers 5(–6)-merous, in racemes. *Flowers yellow; October to November.* Bushveld and mopane veld. *Gerstner 6034.*

W S C N E

leprieurii Guill. & Perr.(= *Fagara leprieurii* (Guill. & Perr.) Engl.)

Shrub or small tree, up to 3 m high. Leaflets with reddish, translucent glands, scattered over surface, oblong to ovate, 30–130 × 18–48 mm, long acuminate, margins crenulate. *Flowers white; October to November*. Woodland. Van Wyk 5590.

W S C N E

thorncroftii (I. Verd.) P.G. Waterman(= *Fagara thorncroftii* I. Verd.)

Tree, up to 12 m high. Inflorescence bearing male and female flowers. Leaflets sessile, obliquely elliptic, margins serrate with single gland at base of each sinus. *Flowers yellow; October to November*. Woodland. Thorncroft 9616.

W S C N E

SALICACEAE

Deciduous trees or shrubs. Leaves alternate, with stipules. Flowers small, clustered into erect or pendulous spikes; male and female on separate plants. Sepals and petals absent. Stamens 2 or more. Ovary superior, 1-locular; stigmas usually forked. Fruit a capsule with 2 valves. Seeds with white silky hairs.

Key after Glen (pers. comm.) & Retief.

Buds with several outer scales; bracts dentate or ciliate-fimbriate; leaves broadly deltoid, ± as wide as long **Populus**Buds with 1 outer scale; bracts entire; leaves ± lorate, much longer than wide **Salix****Populus** L. (s. Afr.: 2 spp.)

1872000

Bailey. 1977. Hortus Third: 900–902.

alba L.*

Deciduous tree, up to 30 m high. Twigs, buds and underside of leaves white-tomentose. Catkins 80–100 mm long. Roadsides, edge of streams in forest. Native to Europe and Asia. Henderson 643.

W S C N E

Salix L. (s. Afr.: 5 spp.)

1873000

Immelman. 1987. Bothalia 17: 171–177.

babylonica L.*

Tree, up to 9 m high. Branches hanging vertically. Leaves tapering to a long-acuminate apex. Female flowers sessile. *Flowering August to September*. Spreading in marshy areas and along streams. Nativity uncertain, possibly China. Kinges 7797.

W S C N E

mucronata Thunb. subsp. **mucronata**(= *S. capensis* Thunb. var. *mucronata* (Thunb.) Andersson, = *S. subserrata* Willd.)

Shrub or small tree, up to 5 m high. Branches drooping. Leaf lamina (8–)14–23 mm wide, 3–5(–7) times as long as wide. Female flowers on pedicels 2–4 mm

long, appearing in spring. Damp places along rivers or streams. Hardy 957.

W S C N E

mucronata Thunb. subsp. **capensis** (Thunb.) Immelman(= *S. capensis* Thunb., = *S. gariepina* Burch.)

Small tree, up to 5 m high. Branches drooping, twigs slender, glabrous. Leaf lamina 5–20 mm wide, usually more than 5 times as long as wide. *Flowering September to December*. Along streams and rivers. Botha & Ubbink 1566.

W S C N E

mucronata Thunb. subsp. **wilmsii** (Seemen) Immelman

Slender shrub or tree, up to 4 m high. Branches drooping, branches and young leaves usually very densely grey-canescens. Leaf lamina 5–20 mm wide, usually more than 5 times as long as wide, summer leaves usually entire. *Flowering December to May*. Along streams and in riverine bush. Galpin 13733.

W S C N E

mucronata Thunb. subsp. **woodii** (Seemen) Immelman(= *S. woodii* Seemen)

Shrub or small tree, up to 5 m high. Branches drooping. Leaf lamina 5–20 mm wide, usually more than 5 times as long as wide, summer leaves always toothed. *Flowering August to May*. Frequent along rivers and streams. Mogg 19529.

W S C N E

SALVADORACEAE

Shrubs or trees, sometimes subscandent, unarmed or with axillary spines. Leaves opposite, stipules very small or absent. Flowers regular. Calyx campanulate, 4-lobed. Petals free or united. Stamens 4, inserted at base of corolla and united in a ring or free. Ovary superior, 1- or 2-locular; style short to almost absent. Fruit small, a drupe or berry.

Key after Verdoorn in F.S.A. 26: 129 (1963).

Shrubs with axillary spines; flowers unisexual, dioecious; ovary 2-locular; stigma obvious **Azima**
Unarmed trees or shrubs; flowers hermaphrodite or subunisexual; ovary 1-locular; stigma indistinct **Salvadora**

Azima Lam. (s. Afr.: 1 sp.) 6444000

Verdoorn. 1963. F.S.A. 26: 128–132.

tetracantha Lam.

Shrub or climber, 0.6–0.9 m or up to 8 m high. Branchlets terete or quadrate, armed with 4 spines at each node. Leaves opposite or subopposite, 2 pairs of lateral nerves from near base of lamina. *Flowers greenish to yellowish; August to November*. In bush, scrub or forest, along rivers, on hillsides, in thornveld. *Van der Schijff 4064.*

W S C N E

Salvadora Garcin ex L. (s. Afr.: 2 spp.) 6446000

Verdoorn. 1963. F.S.A. 26: 132–134.
Vickery. 1983. F.Z. 7,1: 377–380.

australis Schweick.

(= *S. angustifolia* Turrill var. *australis* (Schweick.) I. Verd.)

Tree or shrub, 3.3 m or up to 6.75 m high. Leaves linear-oblong, rounded at apex and long and narrowly

cuneate at base, thickly grey puberulous. Terminal panicles ± as long as or shorter than leaves. Glands alternating with stamens conspicuous. *Flowers greenish white; June to October*. Brackish sandy flats or limestone formation near rivers. *Van der Schijff 645.*

W S C N E

persica L.

Bushy, evergreen shrub, 0.6–5.0 m high. Leaves oblong-elliptic, narrowing slightly and ± equally to base and apex; glabrous or loosely pubescent. Terminal panicles overtopping leaves. Glands alternating with stamens inconspicuous. *Flowers greenish yellow; June and September*. Along rivers and on river flats, in streambank vegetation and dry bushveld. *Van der Schijff 5683.*

W S C N E

SANTALACEAE

Trees, shrubs, herbs, usually parasitic (hemiparasites) on roots of other plants. Leaves alternate or opposite, often bluish green, without stipules. Flowers small, regular, greenish or whitish. Sepals 3–6. Petals absent. Stamens 3–6, opposite sepals. Ovary inferior, 1-locular. Fruit a nut or drupe.

Key after Dyer, Gen. 1: 49 (1975).

- 1a Fruit dry and ribbed; mainly small-leaved parasites **Thesium**
1b Fruit fleshy; leaves well developed 2
2a Shrub, dioecious, fairly densely branched; perianth 3(4)-lobed; style relatively long; stigma 3-lobed **Osyris**
2b Shrub, weak and loosely branched with bisexual flowers, perianth 5-lobed; stigma 5-lobed **Osyridicarpos**

Osyridicarpos A. DC. (s. Afr.: 1 sp.) 2116000

Stauffer. 1961. Vjschr. naturf. Ges. Zürich 217: 400–406.

schimperianus (Hochst. ex A. Rich.) A. DC.

Climbing shrub with stems 3 or 4 m long. Stems striate, twigs with very few leaves. Underside of leaf with 3 prominent veins from base. *Flowers greenish white or yellow; July to June*. Grassland and forest margins. *Stalmans 811.*

W S C N E

Osyris L. (s. Afr.: 1 sp.) 2108000

Stauffer. 1961. Vjschr. naturf. Ges. Zürich 217: 388–399.
Kunkel 1969. F.S.W.A.: 21,1.

lanceolata Hochst. & Steud.

Shrub or small tree, up to 6 m high. Leaves narrowly to broadly ovate, greyish green, alternate. Berries bright red, 8 × 6 mm. *Flowers greenish yellow; October to*

April. Bush clumps, slopes of hillsides and kloofs. *Prosser 1302.*

W S C N E

Thesium L. (s. Afr.: 169 spp.) 2118000

Hill. 1925. F.C. 5,2: 136–200.
Burr Davy. 1932. Fl. Transv. 2: 455–462.

acutissimum A. DC.

Slender herb, up to 200 mm tall. Leaves narrowly linear, acuminate, ascending. Flowers single, on terminal part of branches. Perianth segments glabrous. *Flowers white; January to March*. Grassland. *Venter 9189.*

W S C N E

angulosum DC.

Erect herb, up to 300 mm tall. Stems winged. Flowers in axillary cymules. Cymules shortly pedunculate, compact, bracts shorter than cymules. *Flowers green-*

ish white; November to March. Grassland. Buitendag 1104.

W S C N E

asterias A.W. Hill

Small, virgate shrublet, up to 450 mm tall. Leaves linear, $\pm$ 25 mm long. Bracts much shorter than flowers. Perianth 2,8–3,5 mm long. Stigma sessile. *Flowers white; September to April.* Grassland, vleis. Muller & Scheepers 61.

W S C N E

breyeri N.E. Br.

Herb. Leaves 10–20 mm long, erect or ascending. Edges of flowering branchlets distinctly scabrid. Pedicels 3–7 mm long. *Flowering February.* Lowveld bush. Breyer 17969.

W S C N E

burkei A.W. Hill

Herb, up to 300 mm tall. Leaves straight. Flowers usually in 3-flowered pedunculate cymes in axils of bracts, arranged in racemes. *Flowers white; October to February.* Bushveld and woodland. Codd 10391.

W S C N E

coriarium A.W. Hill

Stout herb, up to 150 mm tall. Leaves straight. Perianth with segments flat, without hood. Bracts elliptic-lanceolate, obtuse. *Flowers yellowish green; January.* Grassland. Bredenkamp & Van Vuuren 220.

W S C N E

costatum A.W. Hill var. costatum

Erect, glabrous herb, up to 150 mm tall. Leaves hard, acutely acuminate. Flowers with well-marked perianth tube, pedunculate, bracts slightly adnate to peduncle. *Flowers white or yellow; August to December.* Grassland. Bredenkamp 369.

W S C N E

costatum A.W. Hill var. juniperinum A.W. Hill

Erect herb, up to 100 mm tall. Leaves densely crowded on stems. Other characters similar to var. *costatum.* *Flowering October.* Grassland. Stauffer & Scheepers 5301.

W S C N E

cytisoides A.W. Hill

Erect herb, up to 300 mm tall. Branches erect, fastigiate. Leaves scattered. Flowers not longer than 2,5 mm. Bracts as long as flowers. Perianth bearded. Anthers exserted. Style 0,5–1,0 mm long. *Flowers white or yellow; October to March.* Grassland. Jenkins sub TRV 6767.

W S C N E

davidsonae Brenan

Herb. Leaves well-developed, up to 25 mm long, linear, midrib pronounced, margins serrulate. Bracts longer

than flowers. *Flowering February.* Grassland. No specimens in PRE.

W S C N E

deceptum N.E. Br.

Herb. Bracts scabrid at edges, longer than flowers. Perianth lobes bearded, longer than tube. *Flowers solitary or in clusters of 2–4; white; September to October.* Grassland. Rogers 14780.

W S C N E

densum N.E. Br.

Densely leafy herb, up to 230 mm tall. Leaves 10–20 mm long. Bracts and bracteoles overtopping flowers. Perianth lobes glabrous within. Grassland. Rogers 21967.

W S C N E

disparile N.E. Br.

Scabrid shrub, up to 500 mm tall. Leaves 7–11 $\times$ 0,8 mm, linear, acute. Perianth bearded. *Flowers white; July.* Grassland. Venter 6202.

W S C N E

exile N.E. Br.

Small herb, up to 140 mm tall. Overtopping flowerless branches very conspicuous. Leaves 2–6 mm long, lax, erect or ascending, usually incurved. *Flowers white; October to November.* Grassland. Pott 4709.

W S C N E

goetzeanum Engl.

Erect, much-branched herb, up to 200 mm tall. Leaves erect. Flowers in racemes. Bracts adnate to peduncles, margins entire, keeled. Perianth segments bearded. *Flowers white; October to December.* Grassland. Germishuizen 3389.

W S C N E

gracilarioides A.W. Hill

Densely leafy herb, up to 300 mm tall. Flowers in racemes. Bracts adnate to peduncles. Style very short; stigma subsessile. *Flowers white; August to November.* Grassland. Galpin 543.

W S C N E

gracile A.W. Hill

Herb, up to 250 mm tall. Racemes short. Flowers usually in 3-flowered pedunculate cymes. Style scarcely reaching to base of anthers. *Flowers white; November to February.* Grassland. Long sub TRV 32204.

W S C N E

gracilentum N.E. Br.

Herb, up to 200 mm tall. Leaves 5–10 mm long, scattered. Perianth lobes fringed or papillate along edges, but without tuft of hairs hanging from apex. *Flowering October.* Grassland. Rogers 22064.

W S C N E

gypsophiloides A.W. Hill

Herb, up to 300 mm tall. Leaves linear-lanceolate. Bracts longer than flowers. Flowers in loose panicle racemes. *Flowering January to March*. Grassland, rocky slopes. *Galpin 758*.

W	S	C	N	E
---	---	---	---	---

hirsutum A.W. Hill

Small, densely puberulous herb up to 100 mm tall. Leaves linear, with very acute cartilaginous apex. *Flowers solitary in axils of bracts; brownish yellow; October to November*. Grassland. *Fries, Norlindh & Weimarck 1872*.

W	S	C	N	E
---	---	---	---	---

hystrix A.W. Hill

Glabrous herb, up to 200 mm tall. Branchlets spinescent, spreading. Leaves scale-like. Margins of perianth segments fimbriate with fringe of long papillae. Grassland. *Burt Davy sub PRE 11276*.

W	S	C	N	E
---	---	---	---	---

impeditum A.W. Hill

Glabrous herb, up to 500 mm tall. Stems leafy. Leaves well developed. Bracts glabrous on margins. Anthers exserted. Style 0.5 mm long. *Flowers white; August to November*. Grassland. *Van Wyk 2370*.

W	S	C	N	E
---	---	---	---	---

inversum N.E. Br.

Herb, up to 100 mm tall. Leaves 2–4 mm long, usually adpressed to stem. Terminal flower opening first. Perianth-lobes glabrous within. *Flowering October*. Grassland. *Rogers 23206*.

W	S	C	N	E
---	---	---	---	---

junceum Bernh. var. **junceum**

Erect herb, up to 300 mm tall. Stems rush-like. Leaves scale-like. Flowers in lax spikes. Bracts whitish scurfy margins. *Flowers white; January*. Grassland. *Theron 1722*.

W	S	C	N	E
---	---	---	---	---

junodii A.W. Hill

Slender herb, up to 450 mm tall. Leaves narrowly linear, curved. Perianth with external glands conspicuous. *Flowers pale brown; November*. Grassland. *Pott 4778*.

W	S	C	N	E
---	---	---	---	---

lesliei N.E. Br.

Herb, up to 150 mm tall. Leaves and stems scabrid with minute tubercles. Perianth lobes bearded. *Flowering September*. Grassland. *Leslie 5681*.

W	S	C	N	E
---	---	---	---	---

magalismontanum Sond.

Erect herb, up to 0.6 m high. Flowers in elongated lax spikes. Bracts shorter than flowers. Perianth bearded.

Style 0.8 mm or more long. *Flowers white; September to February*. Grassland. *Venter 2848*.

W	S	C	N	E
---	---	---	---	---

mossii N.E. Br.

Herb, up to 160 mm tall, green not glaucous. Leaves 4–20 mm long, spreading or ascending. Flowers 3–5 in a cymule. *Flowering November*. Grassland. *Moss & Rogers 60*.

W	S	C	N	E
---	---	---	---	---

multiramulosum Pilg.

Shrub, up to 500 mm tall. Stems erect. Leaves linear, 3–6 mm long, scattered. Flowers 1–3 in a cymule. Bracts shorter than flowers. *Flowers white; August to January*. Grassland. *Krynauw 687*.

W	S	C	N	E
---	---	---	---	---

nigrum A.W. Hill

Herb, up to 200 mm tall. Perianth segments with deep hood, bearded. Bracts lanceolate, acute. *Flowers greenish white; August*. Grassland. *Morris 47*.

W	S	C	N	E
---	---	---	---	---

pallidum A. DC.

(= *T. floribundum* A.W. Hill)

Bushy herb, up to 400 mm tall. Stems slightly ribbed. Leaves and bracts ± rounded on back. Inflorescence several-flowered. *Flowers white, October to December*. Rocky grassland. *Pienaar & Kok 1302*.

W	S	C	N	E
---	---	---	---	---

pottiae N.E. Br.

Small shrublet, up to 200 mm tall. Leaves linear-subulate, scattered, lower leaves 5–8 mm long. Style shorter than tube or reaching to ± halfway up perianth lobes. *Flowering December*. *Pott 5511*.

W	S	C	N	E
---	---	---	---	---

procerum N.E. Br.

Erect shrublet, up to 1 m high. Stem and main branches terete, not furrowed. Leaves 4–12 mm long. Flowering branches compressed, striate. *Flowers white; October to January*. Hillsides. *Codd 2314*.

W	S	C	N	E
---	---	---	---	---

racemosum Bernh.

Erect, glabrous, many-stemmed herb, up to 400 mm tall. Leaves herbaceous. Flowers with well-marked perianth tube, sessile. *Flowers greenish white; November to January*. Grassland. *Codd 6177*.

W	S	C	N	E
---	---	---	---	---

rasum (A.W. Hill) N.E. Br.

(= *T. impeditum* A.W. Hill var. *rasum* A.W. Hill)

Herb, up to 300 mm tall. Lower flowers opening first. Perianth tube very short, lobes 1 mm long. Perianth lobes quite glabrous within or fringed with papillae. *Flowers white; December*. Grassland. *Moss & Rogers 1807*.

W	S	C	N	E
---	---	---	---	---

resedoides A.W. Hill

Small, erect, much-branched herb, up to 200 mm tall. Leaves with recurved tips. *Flowers usually in 3-flowered pedunculate cymules in bract axils arranged in racemes; white; November to February.* Grassland. *Strey sub PRE 29756.*

W S C N E

resinifolium N.E. Br.

Herb, up to 200 mm tall. Leaves 7–17 mm long, deflexed or very spreading. Edges of flowering-branches smooth. Perianth lobes glabrous, $\pm$ equalling or longer than tube. *Flowering November.* Mountain grassland. *Moss & Rogers 1305.*

W S C N E

rogersii A.W. Hill

Herb, up to 200 mm tall. Stems erect, overtopping branches few or many. Leaves 3–8 mm long, ascending. Flowers sessile or the lower on pedicels 1 mm long. Perianth lobes bearded. *Flowering March.* Grassland. *Jenkins sub TRV 12090.*

W S C N E

scirpioides A.W. Hill

Erect herb, up to 300 mm tall. Stems rush-like. Leaves ovate scales. Bracts broadly ovate, acute. *Flowers white; October to December.* Grassland. *Leendertz 3623.*

W S C N E

semotum N.E. Br.

Flowers in small 3–6-flowered, dense clusters or spikelets 3–5 mm long on peduncles 1–6 mm long. Calyx lobes 1 mm long, not bearded, apparently spreading out flat. No specimens in PRE.

W S C N E

spartioides A.W. Hill

Herb, up to 150 mm tall. Stems slender, ascending, brown when dry. Flowers in short, $\pm$ dense spikes. Bracts with finely fringed margins. *Flowers greenish white; September to March.* Vleis. *Acocks 16200.*

W S C N E

subsimile N.E. Br.

Herb, up to 200 mm tall. Leaves 4–5 mm long, erect and often adpressed to stem. Flowers sessile. Perianth lobes glabrous within or fringed with papillae along edges. *Flowers white; October.* Grassland. *Rogers 18655.*

W S C N E

transvaalense Schltr.

Finely pubescent herb, up to 200 mm tall. Leaves ribbed. Flowers in dense, compact spikes. Perianth externally hairy. *Flowers white; September to December.* Grassland. *Coetsee 508.*

W S C N E

triflorum Thunb.

Scandent herb, up to 500 mm tall. Leaves broadly linear or linear-lanceolate. Flowers in indeterminate branched racemes. Cymules 3–5-flowered. Peduncles elongated, divaricately branched. *Flowers dull white or greenish yellow; December to May.* Bushveld. *Stalmans 67.*

W S C N E

utile A.W. Hill

Stiff, erect shrublet or undershrub, up to 1.5 m high, with erect branches. Leaves scattered, narrowly linear. Bracts shorter than flowers. *Flowers dull yellow or white; September to February.* Grassland, hillsides. *Westfall 739.*

W S C N E

zeyheri A. DC.

(= *T. longirostre* Schltr. ex A.W. Hill,
= *T. schlechteri* A.W. Hill)

Half-woody shrublet. Flowers longer than 4 mm, style longer than 2 mm. Perianth segments with dense apical beard of stiff or woolly hairs. Anthers exerted. *Flowers white; March.* Grassland. *Germishuizen 755.*

W S C N E

SAPINDACEAE

Trees, shrubs or climbers. Leaves alternate, usually compound, without stipules. Flowers regular, small, unisexual or bisexual, with disc outside stamens. Sepals 2–7. Petals 3–5 or absent. Stamens 4–8 or many, arising from disc, often hairy. Ovary superior. Fruit a drupe or capsule, or a dry, indehiscent fruit with wing-like outgrowths. Seeds often with arils.

Key after Dyer, Gen. 1: 338–339 (1975).

- 1a Leaves compound, rarely 1-foliolate. 2
- 1b Leaves simple, sometimes 1-foliolate. 8
- 2a Leaves imparipinnate or 2-ternate or decompound or (1–)3-foliolate. 3
- 2b Leaves 1- or 2-paripinnate; loculi of ovary 1(2)-ovulate. 5

3a	Herbaceous climber with tendrils; leaves 2-ternate or decompose; fruit a bladder-like capsule	<i>Cardiospermum</i>
3b	Trees or shrubs without tendrils	4
4a	Leaves (1-)3-foliolate; ovary 2-locular, with single, basal ovule in each locule; fruit drupaceous	<i>Allophylus</i>
4b	Leaves imparipinnate, with 5-12 pairs of leaflets; ovary 3-locular, with 2 ovules in each locule	<i>Erythrophysa</i>
5a	Petals rudimentary or absent; fruit of (1)2 or 3 cocci; cocci dorsally longitudinally dehiscent; stamens 6-8	<i>Stadmannia</i>
5b	Petals well developed	6
6a	Fruit a samara with a broad wing; stamens 8	<i>Atalaya</i>
6b	Fruit drupaceous or baccate, cocci not winged	7
7a	Fruit conspicuously lobed; flowers unisexual; stamens (8-)12-20	<i>Deinbollia</i>
7b	Fruit globose, obscurely 3-lobed; leaf rhachis ± winged	<i>Hippobromus</i>
8a	(1) Leaves 1-foliolate; sepals 4; petals 4(0); ovary 2-locular, with single, basal ovule in each locule	<i>Allophylus</i>
8b	Leaves simple	9
9a	Petals (4)5(6); ovary 2- or 3-locular, with single ovule in each locule; fruit globose	<i>Pappea</i>
9b	Petals 0; ovary 2-6-locular, with 2 axile ovules in each locule; fruit angled or winged; young leaves sticky	<i>Dodonaea</i>

Allophylus L. (s. Afr.: 9 spp.) 4734000

De Winter. 1954. Bothalia 6: 407-408.
Exell. 1966. F.Z. 2,2: 496-508.

chaunostachys Gilg
(= *A. gazensis* Baker f.)

Shrub or small tree, up to 5 m high. Leaves 3-foliolate, lamina of terminal leaflet elliptic to narrowly elliptic, up to 16 × 6 mm, margin remotely serrate. *Flowers white; April.* Forest. *Galpin 909.*

W S C N E

decipiens (Sond.) Radlk.

(= *A. spicatus* (Thunb.) Fourc.,
= *Schmidelia decipiens* Sond.)

Many-stemmed shrub or small tree, up to 4 m high. Leaves 3-foliolate, lamina of terminal leaflet 10-45 × 5-25 mm, margins of leaflets deeply lobed. Inflorescence 15-60 mm long, unbranched. *Flowers white; February.* Woodland. *Codd 5269.*

W S C N E

melanocarpus (Sond.) Radlk.

(= *Schmidelia leucocarpa* Sond.,
= *Schmidelia melanocarpa* Sond.)

Shrub or small tree, up to 3 m high. Leaves 3-foliolate, leaflets obovate to elliptic, sparsely hairy, broadly toothed or scalloped. *Flowers* small, in slender, axillary, spike-like racemes; *cream; December to March.* Bushveld and woodland. *Hemm 494.*

W S C N E

transvaalensis Burt Davy

Shrub or small tree, up to 5 m high. Leaves 3-foliolate, leaflets obovate to elliptic, up to 150 × 80 mm, usually conspicuously velvety with fine soft hairs and hairy pockets on undersurface, margin broadly toothed or scalloped. *Flowers creamy yellow or green; December to March.* Riverine thicket, forest, woodland, termite mounds. *Gerstner 5700.*

W S C N E

Atalaya Blume (s. Afr.: 3 spp.) 4735000

Exell 1966 F.Z. 2,2: 518-521.

alata (Sim) H.M.L. Forbes
(= *Diacarpa alata* Sim)

Tree, up to 4 m high. Leaves paripinnate, leaflets 5-7-jugate, narrowly elliptic to narrowly ovate, oblique (especially at base), papyraceous, discolorous. *Flowers cream; November.* Bushveld. *Viljoen 21.*

W S C N E

Cardiospermum L. (s. Afr.: 4 spp.) 4726000

Bowden. 1966. F.Z. 2,2: 508-512.

corindum L.

(= *C. alatum* Bremek. & Oberm.)

Herbaceous or slightly woody, densely puberulous annual climber. Leaves pinnate to 2-ternate, leaflets crenate to lobed. Flowers 2-6 mm long. Fruit ovoid to obversely tetrahedroid. *Flowers white to creamy yellow; October to May.* Bushveld, woodland, roadsides. *Codd 4248.*

W S C N E

halicacabum L. sens. lat.

Annual, herbaceous or slightly woody climber. Leaves 2-ternate, leaflets incised-serrate. Flowers 2-6 mm long. Fruit obversely tetrahedroid. *Flowers white; July to June.* Streambanks, riverine forest. *Arnold 1226.*

W S C N E

Deinbollia Schum. & Thonn. (s. Afr.:

2 spp.) 4740000

Exell. 1966. F.Z. 2,2: 521-525.

oblongifolia (E. Mey. ex Arn.) Radlk.

(= *Sapindus oblongifolius* (E. Mey. ex Arn.) Sond.)

Shrub, up to 1,5 m high. Lamina elliptic to oblong-elliptic, leaflets 5-7-jugate, petiole 30-90 mm long. Sepals 4,5-5,5 mm long. *Flowers cream; February to May.* Riverbanks. *Van Rooyen sub PRE 59113.*

W S C N E

xanthocarpa (Klotzsch) Radlk.

Shrub or small tree, up to 7 m high. Leaves with 3-9 pairs of opposite to subopposite leaflets, leaf rhachis usually narrowly winged, petiole not longer than 10

mm or leaf subsessile. *Flowers cream; July*. Scrub, riverbanks. *Obermeyer sub TRV 28285*.

W S C N E

Dodonaea Mill. (s. Afr.: 1 sp.) 4831000

Leenhouts. 1983. *Blumea* 28,2: 271–289.

angustifolia L.f.

Shrub or small tree, up to 4 m high. Leaves narrowly elliptic, base narrowly cuneate and decurrent into petiole. Fruit up to 20 × 20 mm, subcircular in outline, emarginate at apex and base, with 2 or 3 glabrous, membranous wings. *Flowers greenish yellow; July to June*. Woodland. *Krynauw 1380*.

W S C N E

Erythrophysa E. Mey. ex Arn.

(s. Afr.: 2 spp.) 4826000

Hutchinson. 1932. *Kew Bull.* 1932: 150.

transvaalensis I. Verd.

Shrub or small tree, up to 4 m high. Branches reddish brown, smooth. Leaves imparipinnate, rhachis winged. Inflorescence paniculate, terminal. Fruit inflated, 3-angled, 80 × 50 mm. *Flowers cream or green, sometimes entirely suffused with red; October to February*. Rocky slopes. *Venter 1115*.

W S C N E

Hippobromus Eckl. & Zeyh. (s. Afr.:

1 sp.) 4836000

Van Wyk. 1984. Field guide to the trees of the Kruger National Park: 245.

pauciflorus (L.f.) Radlk.

(= *H. alata* (Thunb.) Eckl. & Zeyh.)

Tree, up to 5 m high. Leaves pinnate, leaflets subopposite, margins entire, serrate or toothed, reflexed. *Flowers in dense panicles; red; July to November*. Riverine thicket, scrub, streambanks, forest margins. *Liebenberg 2791*.

W S C N E

Pappea Eckl. & Zeyh. (s. Afr.: 1 sp.) 4784000

Exell. 1966. *FZ* 2,2: 540–541.

capensis Eckl. & Zeyh.

(= *P. capensis* Eckl. & Zeyh. var. *radkloferi* (Schweinf. ex Radlk.) Schinz.

= *P. fulva* P. Conrath)

Tree, up to 10 m high. Leaves simple, lamina up to 100 × 60 mm, oblong, rounded at both ends, pubescent beneath, margin entire to sharply serrate, chartaceous to subcoriaceous. *Flowers in fascicles along rhachis; yellow or cream; August to April*. Riverine woodland, bushveld and grassland. *Balsinhas 3614*.

W S C N E

Stadmannia Lam. (s. Afr.: 1 sp.) 4785000

Exell. 1963. *F.Z.* 2,2: 533–534.

oppositifolia (Lam.) Poir. subsp. rhodesica Exell

Tree, up to 20 m high. Branchlets, petioles, rhachis, pedicels and ovary tomentellous. Leaves paripinnate, leaflet lamina 85 × 35 mm. Fruit of 2 or 3 cocci which are ± 12 mm in diameter. Arillode surrounding seed. *Flowers dull white; October*. Rocky koppies, gorges. *Brynard & Pienaar 4253*.

W S C N E

SAPOTACEAE

Trees or shrubs; milky latex present; young growth often with rusty or brownish colour. Leaves alternate, without or with stipules. Flowers regular, white or cream, axillary or in tufts on older, often leafless, branches. Corolla with 5–8 lobes, each lobe often with 2 petal-like appendages. Stamens 5–8, arising from and opposite corolla lobes; filaments often shorter than anthers. Fruit a berry. Seeds shiny with broad scar.

Key after Dyer, Gen. 1: 444–445 (1975).

- 1a Flowers (4)5(6)-merous; sepals in single whorl or at least not manifestly biseriate 2
- 1b Flowers 3 or 4(5)-merous; sepals manifestly biseriate; corolla lobes usually with conspicuous, lateral appendages 3
- 2a Berry globose, 1-seeded; seeds subglobose or depressed-globose, bluntly 4- or 5-angled or faintly ribbed; staminodes ± petaloid **Sideroxylon**
- 2b Berry usually ovoid, ellipsoid or oblong; seeds longer than broad; leaves with numerous, closely parallel lateral nerves and short dense indumentum **Englerophytum**
- 3a Flowers generally 3-merous; sepals 6 in 2 dissimilar whorls; stamens as many as calyx lobes **Manilkara**
- 3b Flowers generally 4-merous; sepals 8 in 2 dissimilar whorls 4

- 4a Seeds laterally flattened, with small basal circular scar; endosperm present **Mimusops**
4b Seeds ellipsoid, not or only slightly laterally compressed, with large scar; endosperm absent **Vitellariopsis**

Englerophytum Kar. Krause (s. Afr.: 2 spp.) 6377020

Meeuse. 1963. F.S.A. 26: 37–40.
Pennington. 1991. The genera of Sapotaceae: 250–253.
Bredenkamp & Smith. 1993. Bothalia 23: 235–236.

magalismontanum (Sond.) T.D. Penn.
(= *Chrysophyllum magalismontanum* Sond.,
= *Pouteria magalismontana* (Sond.) A. Meeuse,
= *Bequaertiodendron magalismontanum* (Sond.) Heine & Hemsl.)
Large tree or shrub, 1 m or up to 17 m high. Leaves usually rounded or emarginate at apex, usually rusty-tomentose on lower surface. *Flowers* usually pedicellate, fasciculate or solitary, often on raised warts on naked branches below leaves; *white or whitish turning reddish or brown; August to January*. Confined to quartzite and granite rocks. *Van der Schijff 675.*

W	S	C	N	E
---	---	---	---	---

natalense (Sond.) T.D. Penn.
(= *Chrysophyllum natalense* Sond.,
= *Pouteria natalensis* (Sond.) A. Meeuse,
= *Bequaertiodendron natalense* (Sond.) Heine & Hemsl.)
Medium-sized tree, 6–17 m high. Leaves usually bluntly acuminate at apex, usually silvery white on lower surface. *Flowers sessile, solitary or 2 or 3 together in leaf axils; white or yellowish; March*. Forests. *De Winter & Killick 8953.*

W	S	C	N	E
---	---	---	---	---

Manilkara Adans. (s. Afr.: 4 spp.) 6386010

Meeuse. 1963. F.S.A. 26: 48–52.
concolor (Harv. ex C.H. Wright) Gerstner
(= *Mimusops concolor* Harv. ex C.H. Wright)
Small tree or shrub, up to 15 m high. Twigs slender, not conspicuously zigzag, divaricate or subverticillate. Leaves not congested at very tips of branches. *Flowers yellow or yellowish; February*. Lowland forest. *Van der Schijff 4206.*

W	S	C	N	E
---	---	---	---	---

mochisia (Baker) Dubard
(= *Mimusops mochisia* Baker)
Large shrub or tree, up to 15 m high. Twigs thick, conspicuously zigzag, divaricate or subverticillate. Leaves crowded in fan-like groups at tips of branches; glabrous. Pedicels 8–12 mm long, sparingly pubescent. Sepals sparsely pubescent outside. *Flowers white to pale yellow or greenish yellow; September to December*. Dry savanna vegetation. *Van der Schijff 1136.*

W	S	C	N	E
---	---	---	---	---

Mimusops L. (s. Afr.: 3 spp.) 6386000

Meeuse. 1963. F.S.A. 26: 45–47.
obovata Sond.
(= *M. oleifolia* N.E. Br.,
= *M. woodii* Engl.)
Tree, up to 20 m high. Branches and leaves soon glabrous. Leaves usually small (shorter than 60 mm), petioles shorter than 10 mm. *Flowers ± 20 mm in diameter when fully expanded, solitary in axils, sometimes 2 together; white; November*. In evergreen, dense to fairly open forests. *Botha sub PRE 48963.*

W	S	C	N	E
---	---	---	---	---

zeyheri Sond.
(= *M. kirkii* Baker)
Tree, up to 15 m high. Leaves often longer than 60 mm, petioles longer than 10 mm, young leaves and tips of young branches densely rusty-pubescent. *Flowers up to 15 mm in diameter when fully expanded, often in clusters of more than 2 flowers; dull white, pale cream or pale yellow; October to May*. Dry, wooded areas. *Van der Schijff 1461.*

W	S	C	N	E
---	---	---	---	---

Sideroxylon L. (s. Afr.: 1 sp.) 6368000

Meeuse. 1963. F.S.A. 26: 34–35.
Hemsley. 1966. Kew Bull. 20: 472–478.
inermis L. subsp. inermis
Small tree or shrub, up to 8 m high, occasionally 10–12 m high. Leaves elliptic to obovate-oblong. Seeds 6–9 mm in diameter. *Flowers pedicellate, greenish white; September to January and in April*. Woodland. *Codd 7776.*

W	S	C	N	E
---	---	---	---	---

Vitellariopsis (Baill.) Dubard (s. Afr.: 2 spp.) 6386020

Aubréville. 1963. Adansonia 3: 42.
Meeuse. 1963. F.S.A. 26: 42–44.
marginata (N.E. Br.) Aubrév.
(= *Austromimusops marginata* (N.E. Br.) A. Meeuse)
Tree, 6–20 m high. Leaves usually longer than 60 mm, generally obovate, petiole usually longer than 10 mm. Pedicels 20–50 mm long. *Flowers dull white; November to January*. Lowland or lower forests in frost-free areas. *Van der Schijff 3960.*

W	S	C	N	E
---	---	---	---	---

SCROPHULARIACEAE

Herbs, shrublets or rarely small trees. Leaves opposite, alternate or whorled, rarely radical without stipules. Flowers usually irregular, often 2-lipped. Petals 4 or 5, united. Stamens 4, 2 of which are longer than the others, attached to petals. Ovary superior, 2-locular. Fruit a many-seeded capsule, sometimes berry-like.

Key after Dyer, Gen. 1: 541–544 (1975) with minor changes by Retief after Hilliard, The Manuleae: 73–74 (1994).

- 1a Ovary oblong, ovules 2 in each loculus from centre of axis, funicles pulvinate, hollowed, 1 turned up, 1 down **Tetraselago**
- 1b Ovary not as above 2
- 2a Posterior (upper) lobes of corolla exterior in bud; herbs, undershrubs, or sometimes small trees 3
- 2b Posterior or upper lobes of corolla entirely or sometimes only partially interior in bud; many parasites or half-parasites 29
- 3a Leaves alternate, very rarely opposite; corolla without basal inflation or spur 4
- 3b Leaves usually opposite near base, sometimes rosulate or verticillate, occasionally alternate above; corolla tube sometimes with pockets or spurs 6
- 4a Herbs, erect; fertile stamens 2 **Anticharis**
- 4b Undershrubs, sometimes small and tufted or procumbent; stamens 4 5
- 5a Anthers of posterior pair of stamens smaller than others, often empty; capsule short, obcordate **Aptosimum**
- 5b Anthers all perfect; capsule ovoid-conical **Peliostomum**
- 6a Corolla tube pocketed, sacculate or spurred near base 7
- 6b Corolla tube without pockets or spurs near base of tube 9
- 7a Anther thecae separate, distinct; capsule dehiscent, with 2 lateral valves **Linaria**
- 7b Anther thecae confluent; capsule dehiscent or loculicidal 8
- 8a Capsule septicidal **Nemesia**
- 8b Capsule loculicidal **Dictis**
- 9a Shrubs, or trees, or softly woody epiphytes 10
- 9b Herbs or undershrubs 15
- 10a Fruit fleshy 11
- 10b Fruit capsular 12
- 11a Calyx 3–5-cleft **Halleria**
- 11b Calyx 5-partite **Teedia**
- 12a Inflorescence mainly axillary; flowers campanulate, solitary or in few-flowered, pedunculate cymes, usually overtopped by leaves; hairs simple; leaves usually ternate **Bowkeria**
- 12b Inflorescence mainly terminal and overtopping leaves; corolla funnel-shaped to narrowly cylindrical 13
- 13a Branchlets slender, straight and often spinescent, leaves small; flowers in small terminal clusters **Antherothamnus**
- 13b Branchlets not markedly straight and spinescent; corolla tube cylindrical to trumpet-shaped 14
- 14a Leaves sessile to shortly petiolate; corolla tube funnel-shaped or subcylindrical, lobes ovate or oblong **Freylinia**
- 14b Leaves petiolate, somewhat soft; corolla tube $\pm$ trumpet-shaped, rarely shorter than 25 mm; style becoming long-exserted **Phygelius**
- 15a Stamens 4, rarely 2; anthers becoming 1-thecos by confluence of divaricate thecae; mainly dry land herbs or undershrubs 16
- 15b Stamens 4, or 2, or rarely 5; anther thecae 2, usually distinct, rarely confluent; mainly water plants or in habitat of unusual moisture conditions 20
- 16a Bracts, if present, free from calyx, not adhering along pedicel 17
- 16b Bracts not as above 19
- 17a Posticous filaments decurrent down corolla tube, often to base; corolla tube abruptly expanded at apex, at most tips of anticous anthers visible in mouth, seeds not ribbed, testa reticulate **Jamesbrittenia**
- 17b Posticous filaments not decurrent down corolla tube 18
- 18a Posticous stamens included, inserted halfway up tube or higher, anticous stamens either included or anthers just visible in mouth **Manulea**
- 18b One or both pairs of stamens usually exserted at anthesis; inside of corolla tube either glabrous or with longitudinal bands of clavate hairs, these sometimes coalescing, sometimes extending from throat onto bases of corolla lobes; seeds patterned with transversely elongated pits arranged like a chequer board **Sutera**
- 19a Bract adnate to part or whole of pedicel, sometimes to base of calyx as well (never more than lower third of calyx tube) **Melanospermum**
- 19b Bract adnate to pedicel and at least half of calyx tube (rarely less) **Zaluzianskya**
- 20a Stamens 2–5, scarcely ever didynamous, only lower pair always perfect; flowers stalked; capsule 2-locular at least in basal part **Limosella**
- 20b Stamens 4, didynamous, or only upper pair perfect 21
- 21a Insertion of all stamens in corolla tube; lower without appendages 22
- 21b Insertion of lower stamens in corolla throat, upper ones in tube usually with appendages at base 26
- 22a Calyx tubular, 5-toothed; anther thecae contiguous **Mimulus**
- 22b Calyx 5-parted or deeply 5-lobed 23

- 23a Anther thecae confluent at apex; capsule turned downwards **Stemodiopsis**
 23b Anther thecae not confluent; capsule not turned downwards 24
- 24a Anther thecae separate; placentas united into a column, winged on both sides after dehiscence **Limnophila**
 24b Anther thecae contiguous 25
- 25a Perfect stamens 2 **Dopatrium**
 25b Perfect stamens 4, didynamous **Bacopa**
- 26a Perfect stamens 2 **Ilysanthes**
 26b Perfect stamens 4 27
- 27a Calyx not plicate or winged, 5-partite, rarely tubular **Lindernia**
 27b Calyx plicate or winged, tubular, 3–5-toothed or 2-lipped 28
- 28a Calyx 5-toothed; lower filaments dilated and sharply bent at base **Craterostigma**
 28b Calyx slightly 2-lipped; lower filaments not sharply bent, with basal appendage **Torenia**
- 29a (2) Shrubs or undershrubs, not parasitic; flowers axillary; stamens 4, didynamous; seeds with reticulate, membranous testa, ... **Graderia**
 29b Herbs, often parasitic 30
- 30a Stamens 2; corolla tube short, with 4 spreading lobes **Veronica**
 30b Stamens 4 31
- 31a Anthers with 2 fertile, equal, or nearly equal thecae 32
 31b Anthers 1-theous or with 1 fertile theca and 1 variously modified theca 34
- 32a Calyx enlarged and inflated in fruit **Melasma**
 32b Calyx not enlarged in fruit 33
- 33a Pedicels ebracteate; corolla usually 20–50 mm long **Gerardiina**
 33b Pedicels bibracteate; corolla usually shorter than 12,5 mm **Alectra**
- 34a Anthers all 1-theous 35
 34b Anthers or at least 2 of them with 1 fertile theca and 1 variously modified theca or with an appendage 38
- 35a Corolla tube rather sharply curved at or above the middle and often dilated at curve; seeds very small and numerous **Striga**
 35b Corolla tube cylindrical, straight or sometimes slightly curved 36
- 36a Capsule nearly always obliquely ovoid and long-beaked; calyx campanulate or sometimes tubular-campanulate ... **Rhamphicarpa**
 36b Capsule oblong or ellipsoid, straight; calyx tubular 37
- 37a Corolla often small; lobes equal or nearly equal; capsule, dry, dehiscent **Buchnera**
 37b Corolla often large; upper lobes united, smaller than lower; capsule fleshy, indehiscent **Cynium**
- 38a Stems climbing; leaves pinnatisect or pinnatifid; anthers of lower stamens 1-theous, without modified second theca ... **Buttonia**
 38b Stems not climbing 39
- 39a Plants ± leafy, not fully parasitic; corolla shortly funnel-shaped; 4 anthers coherent, each with 1 fertile and 1 narrow sterile theca **Sopubia**
 39b Plants parasitic; leaves scale-like; slender herbs; flowers usually relatively large and exposed from bracts **Harveya**

Alectra Thunb. (s. Afr.: 20 spp.) 7597010

Melchior. 1941. Notizbl. bot. Gart. Mus. Berl. 15: 426.

Hepper. 1960. Kew Bull. 14: 402.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 5–8.

Hilliard & Burtt. 1979. Notes R. bot. Gdn Edinb. 37,2: 309.

avensis (Benth.) Merr.

(= *Melasma indicum* (Benth.) Wettst.)

Erect, parasitic annual herb, up to 120 mm tall. Stem and branches hispid with whitish, spreading hairs, leafy. Leaves opposite or subopposite, sessile, ovate. Flowers in axils of upper leaves, forming terminal, leafy or bracteate spikes. *Flowers deep cream; June.* Grassland, foot of mountain. *Smith 266.*

W S C N E

bainesii Hemsl.

Presence doubtful.

capensis Thunb.

(= *Melasma capensis* (Thunb.) Hiern)

Annual, parasitic herb, up to 300 mm tall. Stems erect, whitish pubescent, leafy. Leaves oval, ovate or narrowly ovate. *Flowers subsessile in upper axils, up to 25 mm long, yellow or orange with brown lines on*

petals; November to March. Grassland. *Hilliard & Burtt 14299.*

W S C N E

orobanchoides Benth.

(= *Melasma orobanchoides* (Benth.) Hiern p.p.)

Erect, parasitic herb, up to 300 mm tall. Stems slender, simple (or branched only from base), base of stem orange. Leaves squamiform, 2–5 mm long, entire. Flowers in false whorls, opposite or solitary, 20 mm in diameter when expanded. *Flowers yellow or orange; January to June.* Grassland, moist, shady streambanks, rocky slopes, kloofs. *Immelman 640.*

W S C N E

parvifolia (Engl.) Schinz

(= *A. heyniae* (Dinter) Dinter,
= *Celsia parvifolia* Engl.)

Erect, parasitic herb, up to 350 mm tall, almost leafless, drying black. Stems simple or branching from base only. Robust flowers sessile or with short pedicels (1–3 mm). Corolla up to 15 mm long. *Flowers yellow; March.* Stony, sandy soil. *Schlieben & Hartmann 12028.*

W S C N E

picta (Hiern) Hemsl.(= *Melasma pictum* Hiern)

Erect herb, up to 0.6 m high. Stems slender, branched. Leaves elliptic or lanceolate-obtuse, often with a few obscure teeth. Filaments bearded. *Flowers bright yellow; August to October*. Grassland, mopane veld, red sand. *Pienaar 1003*.

W S C N E

pumila Benth.

Herb, up to 150 mm tall, uniformly dwarf and tufted. Leaves squamiform. Spike dense. Very close to *A. orobanchoides*. *Flowers yellow or yellowish orange; January to June*. Edges of pans, sandy soil in fallow lands. *Schlieben 9235*.

W S C N E

sessiliflora (Vahl) Kuntze var. **sessiliflora**(= *A. melampyroides* Benth.,= *Melasma sessiliflorum* (Vahl) Hiern)

Erect, parasitic herb, up to 300 mm tall. Stems ± densely pubescent with erect white hairs. All leaves sessile, usually broadly cuneate at point of insertion, lamina ovate to broadly ovate-lanceolate, usually deeply toothed in lower part. *Flowers yellow; January to April*. Wet grassland, marshes. *Hanekom 2288*.

W S C N E

sessiliflora (Vahl) Kuntze var. **monticola** (Engl.) Melch.(= *Melasma indicum* Engl. & Gilg var. *monticulum* Engl.)

Erect, parasitic herb, up to 300 mm tall. Stem ± appressed-pubescent to subglabrous. All leaves distinctly petiolate, cuneate to rounded at base, lamina oblong-lanceolate to lanceolate, distinctly and often deeply toothed. *Flowers yellow; March*. Mountainsides. *Galpin sub PRE 13817*.

W S C N E

vogelii Benth.(= *A. angustifolia* Engl.)

Erect, parasitic herb, up to 450 mm tall, leafy, usually parasitic on legumes. Stems relatively stout, much-branched from base. Leaves oblong-lanceolate, not acuminate. *Flowers yellow; October to April*. Cultivated land. *Van Vuuren 1804*.

W S C N E

welwitschii (Hiern) Hemsl.

Identity not clear.

Antherothamnus N.E. Br. (s. Afr.: 1 sp.) 7497010

Merxmüller & Roessler. 1967. F.S.W.A. 126: 8–9.

Hilliard. 1994. The Manuleae: 75–79.

pearsonii N.E. Br.(= *A. rigida* (L. Bolus) E. Phillips,= *Manuleopsis karasmontana* Dinter ex Schinz & Thell.)

Woody shrublet, up to 1.2 m high. Young branchlets thorny. Leaves fascicled, up to 10 mm long, discol-

orous. Capsule small, 2 mm long. *Flowers white; October to January*. Rocky hillsides. *Straub 213*.

W S C N E

Anticharis Endl. (s. Afr.: 6 spp.) 7466000

Merxmüller & Roessler. 1967. F.S.W.A. 126: 9–12.

linearis (Benth.) Hochst. ex Asch.(= *Doratanthera linearis* Benth.,= *A. longifolia* Marloth & Engl.)

Erect herb, up to 300 mm tall. Leaves alternate, linear. Corolla comparatively broad with wide, open throat. Fertile stamens 2. Capsule 8–9 mm long, ovoid or oblong, somewhat acutely pointed at apex. *Flowers purplish; June*. Mopane veld. *Rogers 20709*.

W S C N E

Aptosimum Burch. (s. Afr.: 18 spp.) 7467000

Hiern. 1904. F.C. 4.2: 125–132.

Bremekamp. 1933. Ann. Transv. Mus. 15: 255–256.

Philcox. 1990. F.Z. 8.2: 3–7.

albomarginatum Marloth & Engl.

Erect or decumbent dwarf shrub up to 300 mm tall, densely branched or compact from base. Leaves with white, thickened margins, linear-oblongate, apex acute or obtuse, spinous-pointed, ± glabrous. Calyx lobes ± 4.5 mm long. Corolla 14–20 mm long. *Flowers pale blue to purple; October to April*. Damp areas along pans. *Leistner 585*.

W S C N E

elongatum Engl.(= *A. pubescens* Weber,= *A. depressum* Burch. ex Benth. var. *elongatum* Hiern)

Procumbent dwarf shrub, widely spreading. Stems long, subflexuous, hirsute. Leaves sessile, oblanceolate, 10–20 mm long, covered at least below with forwardly directed, curved, simple or gland-tipped hairs. *Flowers deep blue to purple; November to May*. Grassland. *Hanekom 1512*.

W S C N E

indivisum Burch. ex Benth.(= *A. nanum* Engl.)

Erect or prostrate shrublet, up to 90 mm tall. Stem short, woody, in many cases shortly and closely branched. Leaves densely caespitose, spatulate, crowding the flowers, petioles nearly as long as leaves. *Flowers purple; October to March*. Grassland. *Hanekom 2017*.

W S C N E

lineare Marloth & Engl.(= *A. nelsii* Weber)

Low, usually stunted, dwarf shrub, up to 228 mm tall, densely caespitose. Leaves narrowly oblanceolate or linear, narrowed at apex into an apiculus. Calyx deeply lobed. *Flowers sessile or subsessile, not exceeding*

leaves, purple; May to January. Woodland and mopane veld. *Clarke 1380*.

W S C N E

lugardiae (N.E. Br.) E. Phillips

(= *Peliostomum lugardiae* N.E. Br.,
= *P. leucorrhizum* E. Mey. ex Benth. var. *linearifolium* Weber)

Erect, rigid, much-branched dwarf shrub or perennial herb, up to 400 mm tall, profusely leafy. Leaves narrowly linear-lanceolate, apex acute or subobtuse, subglabrous to minutely puberulent, entire. *Flowers blue to purple or mauve; September to May*. Sandy and calcareous soils. *Van der Schijff 4088*.

W S C N E

marlothii (Engl.) Hiern

Erect or decumbent dwarf shrub up to 400 mm tall, much-branched. Branches densely spiny to sparsely so. Leaves linear-spathulate, (2–)5–11 × 0.75–1.25 mm, alternate but often clustered on small branches. Calyx subdensely glandular-pilose, strongly nerved, especially in fruit. *Flowers bluish violet, darker at centre; September to March*. Sandy soil. *Gubb 122/70*.

W S C N E

patulum Bremek.

Prostrate herb. Leaves sessile, lanceolate, up to 35 mm long and 6 mm wide, apex acute, base cuneate. Calyx villous, tube 3 mm long, lobes linear, 10 mm long. *Flowers dark purple-blue; April to June*. Sandveld, bushveld. *Zwanziger 656*.

W S C N E

procumbens (Lehm.) Steud. var. **elongatum** (Hiern)

Codd

(= *A. depressum* Burch. ex Benth. var. *elongatum* Hiern)

Prostrate, woody plant, densely or numerously branched. Branches leafy throughout. Leaves obovate, often narrowly so, not crowding the flowers, petioles often much shorter than leaves. *Flowers purple or mauve; November to May*. Grassland. *Venter 1647*.

W S C N E

pubescens Weber

A prostrate dwarf shrub. Stem branches with numerous long, creeping branches. Young branches, leaves and calyx densely hairy. Leaves lanceolate to elliptic-spathulate, 10–20(–30) × 3–5 mm. *Flowers purple; October*. Old lands. *Barker 745*.

W S C N E

Bacopa Aubl. (s. Afr.: 2 spp.)

7546000

Hepper. 1963. F.W.T.A. 2: 358.
Philcox. 1979. Kew Bull. 33: 679.

floribunda (R. Br.) Wettst.

(= *B. pubescens* (Skan) Hutch. & Dalziel)

Erect or ascending herb, up to 450 mm tall. Leaves narrowly ovate, narrowed to base or sessile, 10–35 ×

3–6(–15) mm, pubescent. Pedicels pubescent, 5–11 mm long. Largest calyx segment broadly ovate, 8 × 7 mm in fruit, pubescent. *Flowers mauve*. On mud in marshy situations, along rivers. *Louw 4191*.

W S C N E

Bowkeria Harv. (s. Afr.: 3 spp.)

7500000

Hilliard. 1969. Notes R. bot. Gdn Edinb. 29, 1: 1–13.

citrina Thode

Shrub, up to 3 m high. Cymes 1–7-flowered. Flowers generally at least 15 mm long. Corolla pubescent. Calyx not viscid, segments thin-textured. Capsule ± 10 mm long. *Flowers canary-yellow; July to June*. Mountain slopes, riverine bush. *Du Toit 25*.

W S C N E

cyposa MacOwan

(= *B. calceolarioides* Diels)

Shrub or small tree, up to 5 m high. Leaves ovate to narrowly ovate, up to 120 × 40 mm, hairy. Flowers shorter than 10 mm. Cymes usually many-flowered. Capsule 5–6 mm long. *Flowers cream; December to May*. Forest. *Stalmans 1120*.

W S C N E

Buchnera L. (s. Afr.: 9 spp.)

7622000

Hiern. 1904. F.C. 4, 2: 391–394.

Hemsley & Skan. 1906. F.T.A. 4, 2: 373.

Schinz. 1929. Vjschr. naturf. Ges. Zürich 74: 122.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 20.

ciliolata Engl.

Slender, annual, semiparasitic herb, up to 200 mm tall. Stem and branches filiform. Leaves opposite, linear. Spikes glabrous except for ciliolate bracts. *Flowers purplish or blue; January to June*. Seepage areas among rocks. *Crosby 92*.

W S C N E

dura Benth.

Slender, semiparasitic herb, up to 300 mm tall, much-branched from base, drying black. Leaves opposite, obovate oblanceolate or sublinear, hispidulous-scabrid. *Flowers spicate, numerous, purple or blue; November to January*. Grassland. *Germishuizen 2925*.

W S C N E

glabrata Benth.

Slender, semiparasitic herb, up to 350 mm tall. Leaves oval, oblong or obovate. Calyx glabrous except margin. Corolla tube glabrous outside or nearly so. *Flowers white; December to April*. Grassland, near moist areas, vleis, streambanks. *Germishuizen 3898*.

W S C N E

longespicata Schinz

(= *B. brevibractealis* Hiem.)

Erect, semiparasitic herb, up to 200 mm tall, much-branched at base. Leaves opposite or pseudofasciculate, linear, spatulate or oblanceolate. Corolla tube 8–12 mm long, corolla lobes 4–7 mm long. *Flowers violet-blue; September to April.* Grassland. *Stirton 5720.*

W S C N E

reducta Hiern

Erect, semiparasitic herb, up to 300 mm tall. Stem and leaves hairy, ranging from patent to adpressed. Leaves linear or oblanceolate. Flowers spicate, small, up to 5 mm long. Calyx tube hispidulous outside. *Flowers blue-mauve; February to May.* Grassland, edges of pans, along streams. *Hanekom 1789.*

W S C N E

remotiflora Schinz

Semiparasitic herb, up to 300 mm tall. Leaves narrowly ovate to linear acute. Spike lax and long. Bracts ovate to lanceolate, ciliolate. *Schlechter 3721.*

W S C N E

Buttonia McKen ex Benth. (s. Afr.:

2 spp.)

7611000

Hiern. 1904. F.C. 4,2: 384–385.

Obermeyer. 1936. JI S. Afr. Bot. 2: 163.

superba Oberm.

Woody creeper. Leaves opposite, pinnatifid, usually with 2 lateral pinnae and an apical one. Flowers axillary, solitary. Calyx campanulate, ± 25 mm long. Corolla ± 60 mm long. *Flowers pink; November to January.* Rocky hillsides, open woodland. *Van Wyk 5241.*

W S C N E

Craterostigma Hochst. (s. Afr.: 3 spp.) 7560000

Hiern. 1904. F.C. 4,2: 360–362.

plantagineum Hochst.

Herb, up to 80 mm tall, pubescent. Leaves radical, rosulate, broadly ovate, many-nerved, rather fleshy. Flowers racemose, up to 90 mm long. Filaments not or scarcely appendaged. *Flowers pale bluish; November to February.* Bushveld, rock crevices. *Germishuizen 543.*

W S C N E

wilmsii Engl. ex Diels

Acaulescent plant. Leaves in a rosette, narrowly ovate, glabrous above. Scape 120–170 mm tall. Corolla bilabiate with lower lip 3-lobed. Anthers pilose. *Flowers with lower lip dark red, upper lip and tube white;*

October to February. Rocky grassland, in shallow soil. *Retief & Herman 65.*

W S C N E

Cycnium Benth. emend. Engl. (s. Afr.:

3 spp.)

7623000

Hiern. 1904. F.C. 4,2: 395–398.

Hansen. 1978. Dansk. bot. Ark. 32,3: 1–72.

adonense E. Mey. ex Benth. subsp. **adonense**

Semiparasitic perennial herb, up to 200 mm tall, densely caespitose, turning livid-bluish, at length dusky when dry. Leaves ovate or elliptic. *Flowers axillary, 70–100 mm long, white; September to March.* Grassland. *Van Wyk 1747.*

W S C N E

racemosum Benth.

Erect, semiparasitic perennial herb, up to 0,7 m high, dusky when dry. Leaves lanceolate, oblong or elliptic, denticulate in upper half. Racemes terminal. *Flowers 16–30 mm long, pink; November to March.* Grassland. *Stalmans 900.*

W S C N E

tubulosum (L.f.) Engl.

(= *Gerardia tubulosa* L.f.,

= *Rhamphicarpa tubulosa* (L.f.) Benth.)

Semiparasitic perennial herb, up to 0,6 m high, dusky when dry. Leaves opposite, linear, entire or sparingly denticulate. Racemes terminal. *Flowers 10–15 mm long, purple, pale rosy or white; October to May.* Grassland, vlei, edge of stream. *Raal 1221.*

W S C N E

Diclis Benth. (s. Afr.: 5 spp.)

7477000

Hiern. 1904. F.C. 4,2: 200–203.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 23.

Hilliard & Burtt. 1979. Notes R. bot. Gdn Edinb. 37: 311–315.

petiolaris Benth.

Prostrate annual herb. Leaves opposite and alternate, wedge-shaped or shortly narrowed at base, petioles long. *Flowers axillary, white with yellow and purple spots in throat; July to June.* In wet sandy clay, in sandy riverbeds, vleis. *Barker 436.*

W S C N E

reptans Benth.

Prostrate annual or perennial herb. Leaves all opposite, subreniform or subtruncate at base, petioles ± 30 mm long. *Flowers axillary, white, cream with purple markings; July to June.* Grassland, moist areas. *Germishuizen 3460.*

W S C N E

rotundifolia (Hiern) Hilliard & B.L. Burt

Creeping herb. Roots fleshy and fusiform. Leaves opposite, broadly ovate or rotundate, rounded at apex, 5–7-nerved, shortly petiolate. Spur (1,5–)2,0–2,5 mm long. Calyx lobes obtuse and dorsal calyx lobe ± obovate. *Flowering December*. Grassland. *Van Duijn sub PRE 60125*.

W	S	C	N	E
---	---	---	---	---

Dopatrium Buch.-Ham. ex Benth.

(s. Afr.: 1 sp.)

7541000

Taylor. 1963. F.W.T.A. 2: 359.

junceum Buch.-Ham. ex Benth.

Erect, usually simple, aquatic herb, up to 300 mm tall. Stem leaves ovate, 10–50 mm long, lower leaves oblanceolate, 10–30 mm long. Lowermost flowers in inflorescence sessile and cleistogamous. Perfect flowers pedicellate, pedicels 5–10 mm long. Fruit globose or ovoid, 1,5–2,0 mm long. *Flowers white or pale mauve; January to March*. Rock pools, small pans. *Kluge 2419*.

W	S	C	N	E
---	---	---	---	---

Freylinia Colla (s. Afr.: 6 spp.)

7497000

Dyer. 1959. Flower. Pl. Afr. 33: t. 1320.

tropica S. Moore

Shrub, up to 2,5 m high. Branches 4-ribbed owing to decurrent leaf bases. Leaves shortly petiolate, narrowly obovate, toothed in upper part. Corolla ± regular, with tube and spreading lobes. *Flowers mauve; July to June*. Bushveld, riverbanks. *Mogg 38031*.

W	S	C	N	E
---	---	---	---	---

Gerardiina Engl. (s. Afr.: 1 sp.)

7605000

Hiern. 1904. F.C. 4,2: 378–379.

angolensis Engl.

Erect herb, up to 1 m high. Leaves opposite, erect or suberect, narrow, sessile. Racemes terminal, bracteate, elongated. Flowers racemose. Pedicels and calyx red. Corolla trumpet-shaped. *Flowers mauve; December to March*. Vleis, streambanks. *Bruce & Kies 61*.

W	S	C	N	E
---	---	---	---	---

Graderia Benth. (s. Afr.: 3 spp.)

7614000

Melchior. 1932. Notizbl. bot. Gart. Mus. Berl. 11: 603. Codd. 1964. Bothalia 8: 176.

linearifolia Codd

Compact, semiwoody perennial herb. Rootstock thin, woody, branching from base, forming small cushions 70–140 mm in diameter. Leaves crowded, linear, 10–16 × 1 mm, drying black. Filaments minutely puberulous below. *Flowers pink to rose-red; October*. Shallow sandy soil among quartzite rocks. *Codd 9832*.

W	S	C	N	E
---	---	---	---	---

scabra (L.f.) Benth.(= *Bopusia scabra* (L.f.) Presl)

Semiprostrate to erect herb, up to 400 mm tall. Leaves 3- or 5-nerved at base, coarsely dentate or incised-pinnatifid, rigid, scabrous. Filaments covered with patent hairs only at base. *Flowers pink; September to November*. Grassland. *Onderstall 820*.

W	S	C	N	E
---	---	---	---	---

subintegra Mast.(= *Bopusia subintegra* (Mast.) Hiern)

Small subherbaceous plant with several branches from short, woody base. Branches ± trailing. Leaves oblong-ovate. Filaments bearded with patent hairs almost to apex. *Flowers pink or mauve; September to November*. Grassland. *Clarke 1365*.

W	S	C	N	E
---	---	---	---	---

Halleria L. (s. Afr.: 3 spp.)

7493000

Hiern. 1904. F.C. 4,2: 207–210.

Verdoorn. 1945. Flower. Pl. Afr. 25: t. 961.

lucida L.

Glabrous shrub or tree, up to 10 m high. Leaves opposite, ovate or elliptic, up to 90 × 50 mm, dentate or subentire. Berries oval or globose. *Flowers axillary, subfasciculate, corolla tube up to 30 mm long, orange-red; July to January*. Dense riverine forest, streambanks, mountain scrub. *Hanekom 2314*.

W	S	C	N	E
---	---	---	---	---

Harveya Hook. (s. Afr.: 25 spp.)

7627000

Hiern. 1904. F.C. 4,2: 400–415.

Conrath. 1914. Kew Bull. 1914: 134.

Smith. 1931. Kew Bull. 1931: 65.

Hilliard & Burt. 1986. Notes R. bot. Gdn Edinb. 43,3: 377–384.

anisodonta C.A. Sm.

Erect herb, up to 250 mm tall. Leaves scale-like. Spike short, terminal, 4–8-flowered. Corolla up to 60 mm long, far exserted from calyx, lobes broadly orbicular, spreading, up to 7 mm in diameter, limb up to 30 mm in diameter. *Flowers yellow changing to white*. Grassland. *Flugge de Smidt sub PRE 42530*.

W	S	C	N	E
---	---	---	---	---

coccinea (Harv.) Schltr.(= *Aulaya coccinea* Harv.)

Erect, semiparasitic herb, up to 350 mm tall. Leaves small, ovate. Calyx 10–12 mm long. Corolla tube 18–24 mm long, ± 7–10 mm across apex. *Flowers with tube cream or yellow, limb pinkish white or pink; November to March*. Rocky grassland. *Germishuizen 5002*.

W	S	C	N	E
---	---	---	---	---

pumila Schltr.

Dwarf, semiparasitic herb, up to 120 mm tall. Inflorescence corymbose, abbreviated; flowers subsessile. Calyx ± campanulate, glabrescent, lobes subacute. *Flowers*

deep claret to light pink; August to September. Bushveld. Allen sub PRE 42653.

W S C N E

randii Hiern

Dwarf, parasitic herb. Only a tuft of flowers appearing above ground. Corolla tube ± 35 mm long, largest lobes $\pm 15 \times 15$ mm, throat ± 12 mm in diameter. Flowers with tube cream to deep pink, lobes deep pink; September to October. Grassland. Codd 4464.

W S C N E

silvatica Hilliard & B.L. Burt

Erect, parasitic herb, up to 0.6 m high. Raceme 7–20-flowered. Calyx (11–)13–19 mm long. Corolla tube 28–34(–40) mm long. Ovary suborbicular, 4–5 $\times$ 3.5–4.0 mm. Flowers pink; November to February. Forest, kloofs, woodland, in shade to partial shade. Grobbelaar 2608.

W S C N E

speciosa Bernh.

Erect, parasitic herb, up to 1 m high. Corolla tube long, narrow (3–6 mm in diameter). Only 1 of each pair of anther thecae developed. Flowers white with yellow throat or cream; November to January. Grassland, along streambanks. Devenish 508.

W S C N E

Ilysanthes Raf. (s. Afr.: 3 spp.) 7564000

Hiern. 1904. F.C. 4.2: 363–367.

Hemsley & Skan. 1906. F.T.A. 4.2: 348.

bolusii Hiern

Erect herb, up to 50 mm tall. Stems simple or branched and leafy at base. Radical leaves rosulate, obovate or narrowly elliptic, stem leaves opposite, oblong or sub lanceolate. Flowers axillary. Staminodes absent. Flowering December to February. Damp pockets between rocks in open sun. Strey 2859.

W S C N E

dubia (L.) Bernh.

(= *Gratiola dubia* L.,

= *I. riparia* Raf.)

Annual herb, up to 200 mm tall. Leaves opposite, ovate, sessile. Staminodes tuberculate, bearing a small tooth. Flowers axillary, solitary. Peduncles slender, lax, 6–25 mm long. Flowers white; September to May. Muddy soil at edges of pans, streambanks, vleis. Breyer sub TRV 17695.

W S C N E

schlechteri Hiern

Dwarf herb, up to 60 mm tall. Leaves opposite, elliptical, obovate or oblong, obtuse, $\pm$ narrowed at sessile or shortly petiolate, connate base, rather thick. Flowers subsessile, solitary in each axil. Flowers cream or light pink; January to May. Edges of pans. Germishuizen 2873.

W S C N E

Jamesbrittenia Kuntze (s. Afr.: 76 spp.) 7519010

Hilliard. 1994. The Manuleae: 84–212.

accrescens (Hiern) Hilliard

(= *Sutera accrescens* Hiern)

Suffrutex, up to 2 m tall, erect or straggling. Leaves elliptic to obovate, 10–40 $\times$ 5–14 mm, tapering into a petiolar part, margins serrate, glandular-hispid on both surfaces. Corolla limb thick-textured. Flowers with corolla lobes greenish to dull yellow, orange-brown, maroon and dark brown, always with a paler cream to greenish yellow margin; October to January. Rocky places in scrub, often on margins of forest patches. Strey 4112.

W S C N E

albiflora (I. Verd.) Hiern

(= *Sutera albiflora* I. Verd.)

Twiggy dwarf shrublet. Branches ± 100 –450 mm long. Stems, inflorescence axes and pedicels minutely glandular-puberulous. Leaves spatulate or oblanceolate, largest primary leaves 4–16(–20) $\times$ 1–6(–10) mm, margins entire or bluntly few-toothed, lower surface thickly covered with glistening glands, upper surface glabrous or with a few scattered glands. Flowers with corolla lobes white, each marked at base with a dark brown or crimson median bar; July to June. Stony ground. Theron 504.

W S C N E

atropurpurea (Benth.) Hilliard subsp. atropurpurea

(= *Sutera atropurpurea* (Benth.) Hiern)

Wiry, well-branched shrublet, up to ± 1 m tall. Leaves spatulate or spatulate-oblong, thick-textured. Pedicels glabrous or with scattered glistening glands (often oozing, then $\pm$ invisible and the pedicels 'varnished'), rarely also with a few minute stalked glands. Flowers with upper surface of corolla lobes shades of yellowish, orange-, red- or chocolate-brown, margins of lobes creamy or yellowish; July to June. Stony or rocky sites. Repton 1859.

W S C N E

aurantiaca (Burch.) Hilliard

(= *Sutera aurantiaca* (Burch.) Hiern)

Perennial herb. Stems many from crown, ± 60 –300(–750) mm long. Leaves bipinnatisect, cut nearly to midrib, thinly glandular-puberulous below, upper surface clad in crowded glistening glands with very rarely a few glandular hairs as well. Flowers with corolla lobes varying in colour from bright orange to shades of red and purple-pink, throat yellow, the colour extending onto base of lower lip, main veins dark brown to purple; October to March. Sandy or stony places, nevertheless damp or even marshy. Mogg 8691.

W S C N E

burkeana (Benth.) Hilliard

(= *Sutera burkeana* (Benth.) Hiern,

= *Lyperia burkeana* Benth.)

Suffrutex. Stems ± 0.3 –1.5 m long, erect or straggling. Leaves with 1–3 pairs of bold teeth, blade folded and falcate, upper surface gland-dotted, lower surface with

glandular-hispid hairs as well as glistening glands. Racemes few-flowered. Corolla lobes dark-coloured and thick-textured, thick tissue probably an osmophore. *Flowers with corolla lobes varying in colour from olive-green to rich shades of russet-orange, deep red, brownish purple or dark brown; July to June. Rocky, grassy slopes in open woodland or scrub, and scrub on forest margins. Codd & Dyer 9130.*

W S C N E

candida Hilliard

Suffrutex with a thick, woody rootstock. Stem, leaves and calyx soft glandular-pubescent with a few scattered glistening glands. Leaves pseudofasciculate, obovate to oblong, primary leaves up to 7–20 × 3–12 mm. Inflorescence with flowers solitary in upper leaf axils, flowering part sometimes continuing as a vegetative twig. *Flowers white; October to January. Rocky or cliffed, woody sites along rivers and streams. Hafström & Acocks 1167.*

W S C N E

huillana (Diels) Hilliard

(= *Chaenostoma huillanum* Diels,
= *Sutera brunnea* Hiern)

Shrublet, up to 1.2 m high. Stems many from stout caudex. Leaves spatulate or sometimes oblong-spatulate, often thick-textured, primary leaves (3–)10–30 × (1–)2–10 mm. Inflorescence with flowers scattered in axils of primary leaves, often in a few consecutive axils, then a sterile portion, followed by more flowers, twigs usually terminating in a raceme, each flower subtended by a few very small leaves. *Flowers with upper surface of corolla lobes shades of yellow-, orange-, red- or chocolate-brown, the colour often rich and dark; October and January to March. Rocky or stony sites. Thornecroft 2038.*

W S C N E

grandiflora (Galpin) Hilliard

(= *Lyperia grandiflora* Galpin,
= *Sutera grandiflora* (Galpin) Hiern)

Subshrub, up to ± 0.5–1.2 m high. Leaves elliptic, primary leaves up to 15–55 × 5–16 mm, margins serrate to crenate-serrate, both surfaces glandular-hispid. Corolla tube 20–30 mm long, 3–4 mm in throat. *Flowers with corolla lobes lavender-blue or mauve, white, yellowish or greenish around mouth and in throat; July to June. Grassland, scrub, margins of forest or bush clumps. Galpin 394.*

W S C N E

macrantha (Codd) Hilliard

(= *Sutera macrantha* Codd)

Subshrub, up to 1 m high. Leaves narrowly oblanceolate to elliptic, tapering into a short petiolar part, primary leaves up to 10–20(–30) × 2–4(–10) mm, often folded along midrib and ± falcate, both surfaces with a few scattered, glistening glands. *Flowers with corolla lilac to deep violet-mauve, throat yellowish green; June to October. Grassy slopes. Pole Evans 4693A.*

W S C N E

micrantha (Klotzsch) Hilliard

(= *Lyperia micrantha* Klotzsch,
= *Sutera micrantha* Hiern)

Perennial herb. Stems erect, ascending or prostrate, ± 80–600 mm long. Leaves elliptic or ovate-elliptic, largest ones 12–45 × 5–28 mm and divided roughly halfway to one-third to midrib into oblong-elliptic, obtuse or subobtuse lobes. Corolla tube 3.8–5.0 mm. Style short, 1.8–2.2 mm. *Flowers lemon-yellow with orange patch in throat extending to base of lower lip; January, March, June to November. Damp, sandy or clayey soils along riverbanks, around pans and dams and at margins of marshes. Codd & De Winter 4978.*

W S C N E

montana (Diels) Hilliard

(= *Chaenostoma montanum* Diels,
= *Sutera montana* (Diels) S. Moore)

Perennial herb. Stems erect, ascending or decumbent, ± 70–400 mm long. Leaves up to 8–30 × 6–22 mm, blade elliptic to broadly ovate and cut nearly to midrib, 1 or 2 of the largest pairs of lobes cut again, upper surface conspicuously gland-dotted with a few stalked glands. *Flowers yellow, deeper yellow in throat and at base of anticonic lip; January to March, May, September to December. Damp places, around marshes and pans, along rivers and streams. Hanekom 1874.*

W S C N E

silenoides (Hilliard) Hilliard

Perennial herb. Stems several from caudex, erect, ascending or decumbent, up to 500 mm long. Leaves with blades oblanceolate to ovate in outline, ± one-third to half total length petiolar, pinnatisect to bipinnatisect, lobes narrowly oblong to narrowly oblanceolate. Inflorescences with many flowers solitary in axils of uppermost leaves or bracts, producing lax racemes. Corolla with tube cylindrical, abruptly expanded near apex, all lobes ± oblong, apex deeply bifid, tips very acute, margins strongly revolute. *Flowers with corolla lobes brown or reddish brown and thick-textured; October to February. Rocky sites. Codd 8056A.*

W S C N E

stricta (Benth.) Hilliard

(= *Lyperia stricta* Benth.)

Dwarf shrublet, virgately branched, erect or decumbent. Stems up to 450 mm long. Both stems and leaves clad in glistening glands only. Leaves lanceolate to ovate in outline, narrowed to a broad petiolar part, blade cut to midrib, lobes linear-oblong, entire or 1- or 2-toothed or occasionally the secondary lobing more pronounced, then leaves almost bipinnatisect. *Flowers with corolla lobes maroon to crimson, magenta-pink or deep purple; February to May. Rocky sites. Balsinhas 3372.*

W S C N E

Limnophila R. Br. (s. Afr.: 3 spp.) 7532000

Philcox. 1970. Kew Bull. 24: 101–170.

indica (L.) Druce

(= *Hottonia indica* L.,
= *L. gratioides* R. Br.)

Aquatic. Finely divided, submerged leaves present. Flowers sessile 6–12 mm long. Upper aerial leaves on flowering stems entire or shallowly toothed. *Flowers white to pale yellow; March.* Along streams or rivers. *Van Wyk 4782.*

W	S	C	N	E
---	---	---	---	---

Limosella L. (s. Afr.: 8 spp.)

7558000

Glück. 1934. Bot. Jb. 66: 488–563.
Merxmüller & Roessler. 1967. F.S.W.A. 126: 26–28.

africana Glück

Herb, up to 50 mm tall. Leaves narrowly lanceolate, embryonic and mature leaves similar. Peduncles very short, 1–7 mm long. *Flowers small, calyx ± 1,5 mm, corolla lobes ± 0,5 mm long, white or mauve; March to September.* Dams, pans, mudflats. *Hanekom 1829.*

W	S	C	N	E
---	---	---	---	---

longiflora Kuntze

Herb, up to 70 mm tall. Leaves filiform, occasionally apically slightly dilated. Pedicels as long as leaves or longer. *Flowers white or lilac; July to June.* Dams, pans, riverbanks. *Germishuizen 2872.*

W	S	C	N	E
---	---	---	---	---

maior Diels

Herb, up to 130 mm tall. Leaves spatulate with ± 3 nerves, gradually tapering into a petiole. Calyx usually tubular, 4 mm long. Pedicels shorter than petioles. *Flowers white or mauve; September to May.* Vleis, in mud and water of dams, streams. *Van Wyk & Theron 4652.*

W	S	C	N	E
---	---	---	---	---

Linaria Mill. (s. Afr.: 2 spp.)

7480000

Hiem. 1905. F.C. 4,2: 203–205.

vulgaris Mill.*

Herb, up to 250 mm tall. Leaves opposite, verticillate or alternate, sublinear, sessile, entire. Flowers arranged in dense, terminal racemes, spurred. *Flowers yellow; October to December.* Disturbed places. Native to Europe and Asia. *J.B.G. 4913.*

W	S	C	N	E
---	---	---	---	---

Lindernia All. (s. Afr.: 8 spp.)

7562000

Bruce. 1951. Bothalia 6: 235.
Young. 1956. Candollea 15: 125.
Merxmüller & Roessler. 1967. F.S.W.A. 126: 28–29.
Philcox. 1987. Bolm Soc. broteriana 60: 267–270.

conferta (Hiern) Philcox

(= *Ilysanthes conferta* Hiern)

Aquatic herb, up to 500 mm tall. Leaves crowded at or near top of stem, rotund or obovate, rounded at

apex. Stamens 2, staminodes 2. *Flowers axillary, subterminal, white with maroon spots; January to April.* Streambanks, permanent pools on rock table land. *Bruce 84.*

W	S	C	N	E
---	---	---	---	---

dongolensis E.A. Bruce

Erect herb, up to 70 mm tall. Roots intertwining and forming a dense mass. Fleshy basal leaves forming a dense cluster or rosette. Stamens 4, lower pair with purple-tinged, knee-like, puberulous appendage at base. *Flowers white, tinged with lilac with orange spot in throat; February to March.* Rocky hillsides, in water in shallow rock pans. *Bruce 66.*

W	S	C	N	E
---	---	---	---	---

fugax R.G.N. Young

Small, erect herb, up to 35 mm tall. Leaves opposite, oblong, 2–5 × 0,5–1,5 mm. *Flower with upper lip purple without, sordid-yellow within, 3 lower lobes sordid-yellow on both surfaces, but darker and with some purple without, throat purple-striped without, greenish yellow within, with bright yellow patch surrounded by purple just above insertion of stamens; March.* Swampy stream. *Young 3091.*

W	S	C	N	E
---	---	---	---	---

parviflora (Roxb.) Haines

(= *Ilysanthes parviflora* (Roxb.) Benth.)

Erect, decumbent or ascending, annual herb, up to 150 mm tall, terrestrial. Stems leafy throughout. Calyx lobed almost to base. *Flowers white or pale blue; January.* River or stream banks. *Schlechter 4470.*

W	S	C	N	E
---	---	---	---	---

pulchella (Skan) Philcox

(= *Ilysanthes pulchella* Skan)

Erect herb, up to 80 mm tall. Leaves elliptic-oblong. Inflorescence with flowers axillary, solitary, pedunculate. Calyx 5-toothed. Stamines gibbous with very short, proboscis-like appendage. *Flowers white, tinged mauve on lip; November to May.* Shallow soil over granite rocks. *Codd & De Winter 4900.*

W	S	C	N	E
---	---	---	---	---

wilmsii (Engl. & Diels) Philcox

(= *Ilysanthes wilmsii* Engl. & Diels)

Puny herb, up to 90 mm tall. Stem leaves opposite, narrowly spatulate, glabrous, radical leaves several, linear-spatulate, obtuse. Flowers pedunculate. *Flowers purple and white; November to April.* Shallow hollows on rocks. *Van Jaarsveld 300.*

W	S	C	N	E
---	---	---	---	---

Manulea L. (s. Afr.: 74 spp.)

7517000

Hiem. 1904. F.C. 4,2: 221–243.
Hilliard & Burtt. 1979. Notes R. bot. Gdn Edinb. 37,2: 315.
Hilliard & Burtt. 1982. Notes R. bot. Gdn Edinb. 40,2: 286.
Hilliard. 1989. Notes R. bot. Gdn Edinb. 46,1: 49–52.

Hilliard. 1990. Notes R. bot. Gdn Edinb. 46,3: 337–341.
Hilliard. 1994. The Manuleae: 291–384.

paniculata Benth.

(= *M. elliotensis* Overkott ex Jacot Guill.,
= *Sutera elliotensis* Hiern)

Herb, up to 1 m high. Stems erect, hoary pubescent. Leaves elliptic or obovate. *Flowers thyrsoid-paniculate, numerous, white; January to March.* Grassland, rocky hillslopes. *J.B.G. 3015.*

W S C N E

parviflora Benth. var. parviflora

(= *M. natalensis* Bernh.)

Herb, up to 0,75 m high. Stems erect, glandular puberulous. Leaves oblong-spathulate or oblanceolate. Calyx 1,0–1,5 mm long. *Flowers numerous, thyrsoid, subs fasciculate, yellow to dark red; October to May.* Grassland, hillsides. *Smith 872.*

W S C N E

parviflora Benth. var. limonioides (P. Conrath) Hilliard

(= *M. limonioides* P. Conrath)

Perennial herb, up to 0,7 m high. Stems glabrous and glaucous. Leaves in basal rosette except for some small, cauline, broadly linear ones. Corolla tube delicate, 3–5 mm long, lobes spreading, unequally long, oblong or obovate. *Flowers strawberry-pink; October to December.* Grassland. *Bredenkamp 957.*

W S C N E

rhodantha Hilliard subsp. aurantiaca Hilliard

Perennial herb, up to 400 mm tall. Leaves semifleshy. Seeds blue-violet, not white. *Flowers orange-yellow; November to January.* Grassland. *Mauve 4482.*

W S C N E

Melanospermum Hilliard (s. Afr.):

6 spp.) 7522010

Hilliard. 1989. Notes R. bot. Gdn Edinb. 45,3: 481–491.
Hilliard. 1994. The Manuleae: 387–395.

foliosum (Benth.) Hilliard

(= *Polycarena foliosa* Benth.)

Decumbent annual herb, up to 150 mm tall, much-branched, viscid-pubescent, very leafy. Spikes dense, globose in flower. Flowering calyx ± or nearly equaling bract. *Flowers mauve and orange; May to September.* Grassland. *Mogg sub PRE 11451.*

W S C N E

italae Hilliard

Herb, up to 150 mm tall. Glandular hairs absent (sometimes covered with tiny, subsessile glands below inflorescence). Lamina 1,5–8,0 mm long. Corolla tube long, 5,0–5,2 mm. *Flowers white; November.* Shallow, moist soil on rock. *Devenish 1765.*

W S C N E

rudolfii Hilliard

Annual herb. Stem erect, up to ± 120 mm high. Leaves usually elliptic, tapering gradually or more abruptly into a flat petiolar part, ± equalling to half length of blade, both leaf surfaces glandular-puberulous, very occasional hairs on lower margins up to 0,4–0,5 mm long. Inflorescence a very lax terminal raceme. Calyx tube ± 1,25–1,50 mm long. Corolla limb ± 5–6 mm across lateral lobes. *Flowers white; December.* Moist, shady places. *Schlechter 4078.*

W S C N E

rupestre (Hiern) Hilliard

(= *Phyllopodium rupestre* Hiern)

Soft herb, up to 200 mm tall. Leaves opposite or the upper alternate, ovate to broadly ovate, glandular-pilose and herbaceous green on both surfaces. *Flowers white; November to February.* Moist edges of krantzes, in deep shade. *Galpin sub PRE 13028.*

W S C N E

transvaalense (Hiern) Hilliard

(= *Phyllopodium calvum* Hiern,
= *Polycarena transvaalensis* Hiern.)

Slender annual herb, up to 160 mm tall. Lower leaves narrowly obovate or spatulate, upper leaves lanceolate-linear. Flowers rather numerous. Flowering calyx falling short of bract. Glandular-puberulous. *Flowers white with yellow centres; October to April.* Grassland. *Germishuizen 3806.*

W S C N E

Melasma P.J. Bergius (s. Afr.: 1 sp.) 7597000

Hiern. 1904. F.C. 4,2: 371–378.

scabrum P.J. Bergius

Erect herb, up to 0,7 m high, scabrid with short rough dots. Leaves narrowly ovate. Calyx campanulate-oblong, 10-nerved, 5-angled and inflated in fruit. *Flowers white, brown or pale yellow, tube purple or maroon; January to February.* Grassland, streambanks, marshes. *Schlieben 9596.*

W S C N E

Mimulus L. (s. Afr.: 2 spp.)

7524000

Hiern. 1904. F.C. 4,2: 354–355.

gracilis R. Br.

Perennial herb, up to 400 mm tall, branched at base. Leaves opposite, simple, sessile, narrowly ovate, entire or dentate, petioles up to 25 mm long. Flowers solitary in axils of leaves. *Flowers white; September to March.* Grassland, vleis, streambanks. *Codd 8054.*

W S C N E

Nemesia Vent. (s. Afr.: 59 spp.)

7476000

Hiern. 1904. F.C. 4,2: 169–200.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 34–37.

Hilliard & Burtt. 1986. Notes R. bot. Gdn Edinb. 43,3: 385–400.

albiflora N.E. Br.(= *N. flanaganii* Hiern)

Straggling herb, up to 450 mm tall. Leaves ovate, coarsely serrate, almost sessile, hairy with long, soft gland-tipped hairs. Stems, pedicels and calyx lobes clothed in similar hairs. Inflorescence with flowers solitary on long pedicels in upper leaf axils. Capsules (3–)7–14 × (4–)5–7 mm. *Flowers white, mauve in throat; November to February.* Semishade, slopes in kloofs, montane grassland. *Van Jaarsveld 946.*

W S C N E

caerulea Hiern

Perennial herb, producing 1 to several stems from creeping underground stock. Stems leafy below, passing into nude axis, terminating in lax many-flowered bracteate raceme. Leaves ovate, subsessile, margins serrate. Spur 2,0–3,0(–3,5) mm long. *Flowers 8–10 mm long, limb usually violet-blue, palate often yellow, sometimes white, the 2 bosses inside tube at entrance to spur bright yellow; November to January.* Moist grassy places. *Galpin 9804.*

W S C N E

denticulata (Benth.) Fourc.(= *Diascia denticulata* Benth.)

Perennial herb, up to 300 mm tall. Principal leaves 5–10(–18) mm long. Mouth of spur with 2 orange-coloured patches, not or only very slightly raised. Spur (3–)5(–6) mm long. *Flowers pink; November.* Shallow soil at margin of large dolerite rock pavements. *Devenish 1777.*

W S C N E

fruticans (Thunb.) Benth.(= *N. foetens* Vent.)

Herb, up to 450 mm tall, glabrous or in upper part with sessile, glandular hairs, much-branched at base. Leaves linear-lanceolate, seldom elliptic-lanceolate, with short petiole, entire or toothed. Spur narrow. *Flowers pink; September to January.* Grassland. *Turner 1118.*

W S C N E

rupicola Hilliard

Perennial herb, up to 0,75 m high, glandular hairy. Leaves opposite, lamina 20–45 × 10–20 mm, broadly lanceolate to ovate, margin coarsely dentate. Calyx lobes linear to narrowly elliptic, posticous calyx lobes mostly 3,0–3,5 mm long at anthesis. *Flowers often clustered, white, pink or light violet, palate yellow; April to September.* Kloofs, among rocks, shaded places. *Van der Schijff 4461.*

W S C N E

umbonata (Hiern) Hilliard & B.L. Burt

Tufted, perennial herb, up to 400 mm tall, spreading by means of underground runners. Leaves narrowly lanceolate. Inflorescence a thick, terminal cluster. *Flowers lilac-pink, palate yellow with orange-yellow*

patches at mouth of spur; September to February. Grassland. *Germishuizen 1077.*

W S C N E

Peliostomum Benth. (s. Afr.: 6 spp.) 7468000

Hiern. 1904. F.C. 4,2: 132–136.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 37–39.

calycinum N.E. Br.

Shrublet, up to 300 mm tall. Leaves alternate, linear, up to 40 mm long, acuminate at apex. Calyx lobes linear acute, ± 10 mm long. *Flowers blue or violet; November to March.* Lowveld sour bushveld. *Onderstall 1194.*

W S C N E

leucorrhizum E. Mey. ex Benth.

Shrublet, up to 200 mm tall. Branches covered with whitish corky layer at base. Leaves linear to linear-obovate. *Flowers blue; January.* Sandy soil, flood plains. *UP Plantk. Hons. 172.*

W S C N E

origanoides E. Mey. ex Benth.

Prostrate, woody plant. Old stems white. Leaves ovate to obovate-oblong, not longer than 10 mm. Calyx lobes linear in flower. *Flowers purple-blue to light purple; September to April.* Rocky or sandy soil. *Rodin 3668.*

W S C N E

virgatum E. Mey. ex Benth.

Shrublet, up to 300 mm tall. Leaves ovate or obovate-oblong, not longer than 10 mm. Calyx lobes obovate in flower. Anthers shortly ciliate or nearly glabrous. *Flowers purple; January to April.* Shallow sandy soil on hillsides. *Codd 4153.*

W S C N E

Phygelius E. Mey. ex Benth. (s. Afr.:

2 spp.)

7495000

Killick. 1970. Flower. Pl. Afr. 40: t. 1584.

aequalis Harv. ex Hiern

Shrub, up to 2 m high. Leaves opposite, simple, petiole, ovate, 50–100 × 30–80 mm, margin crenulate-serulate. Inflorescence terminal, closely cymose, 80–300 mm long. Corolla with tube narrowly funnel-shaped, 33–45 mm long, slightly curved to straight. Style long, persistent. *Flowers salmon-pink outside, yellow inside; October to June.* Edge of streams. *Germishuizen 3511.*

W S C N E

Rhamphicarpa Benth. (s. Afr.: 2 spp.) 7624000

Hansen. 1975. Bot. Tidsskr. 70,2–3: 103–125.

brevipedicellata Hansen

Herb, up to 300 mm tall. Leaves filiform. *Flowers white*. Marshes. *Acocks* 21958.

W S C N E

fistulosa (Hochst.) Benth.

(= *Macrosiphon fistulosus* Hochst.)

Herb, up to 500 mm tall. Leaves pinnatisect. Calyx lobes with broad base and subulate to filiform tip. Corolla with glandular hairs on outside. Capsules straight or oblique, winged at least along upper suture. *Flowers white*; *January to March*. Streambanks, in moist soil on rocks. *Brynard & Pienaar* 4452.

W S C N E

Sopubia Buch.-Ham. ex D. Don (s. Afr.:

4 spp.)

7616000

Hiern. 1904. F.C. 4,2: 385–388.

Hansen. 1975. Kew Bull. 30: 543–558.

cana Harv. var. **cana**

Perennial herb, up to 300 mm tall. All parts, except flowers and capsules, usually densely clothed with short white felt. Leaves narrowly linear, scattered or fasciculate. Flowers in leafy, terminal, simple racemes. *Flowers mauve pink*; *November to April*. Grassland, grassy hillsides, edges of vleis. *Devenish* 585.

W S C N E

cana Harv. var. **glabrescens** Diels

Perennial herb, up to 300 mm tall. Lower parts of stems pubescent. Leaves subglabrous. Inflorescence hoary pilose with adpressed hairs. *Flowers pink*; *January to February*. Grassland. *Wilms sub* TRV 5853.

W S C N E

mannii Skan var. **tenuifolia** (Engl. & Gilg) Hepper

(= *S. dregeana* Benth. var. *tenuifolia* Engl. & Gilg)

Perennial herb, up to 500 mm tall. Leaves linear to filiform, always simple, crowded, midrib usually indistinct. Racemes densely flowered. Pedicels 2–24 mm long. *Flowers pink*; *January to March*. Grassland, flat marshy areas. *Mohle* 503.

W S C N E

simplex (Hochst.) Hochst.

(= *Raphidophyllum simplex* Hochst.)

Perennial herb, up to 350 mm tall. Stems many-ribbed. Leaves few, simple, linear, appressed to stems. Inflorescence a raceme, flowers somewhat clustered. Calyx 4–6 mm long. *Flowers pink*; *October to January*. Grassland. *Elan-Puttick* 139.

W S C N E

Stemodiopsis Engl. (s. Afr.: 1 sp.) 7535000

Hemsley & Skan. 1906. F.T.A. 4,2: 314.

humilis Skan

Perennial herb, up to 80 mm tall, densely covered with short, stiff, whitish hairs. Leaves ovate, 5–10 × 3–8 mm, cuneate at base, serrate. Capsule ellipsoid-conical, rather abruptly beaked. *Flowers white or pale mauve*; *October to February*. Rock crevices. *Codd & Dyer* 9375.

W S C N E

Striga Lour. (s. Afr.: 7 spp.)

7625000

Hiern. 1904. F.C. 4,2: 379–384.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 41–43.

asiatica (L.) Kuntze

(= *Buchnera asiatica* L.,

= *S. lutea* Lour.)

Semiparasitic herb, up to 300 mm tall, hispidulous-scabrid. Leaves linear. Spikes very slender. Corolla tube minutely glandular-puberulous outside, upper lip much shorter than lower. *Flowers red*; *December to May*. Grassland. *Van der Schijff* 1508.

W S C N E

bilabiata (Thunb.) Kuntze

(= *Buchnera bilabiata* Thunb.,

= *S. thunbergii* Benth.)

Semiparasitic herb, up to 300 mm tall, grey-green when dry, scabrid, hispid. Leaves foliaceous, linear or lanceolate-linear, floral leaves exceeding calyx. *Flowers spicate, dense; purple-pink, mauve or white*; *November to March*. Grassland. *Welman* 382.

W S C N E

elegans Benth.

Semiparasitic herb, up to 330 mm tall, green when dry, hispid-scabrid. Leaves entire, lanceolate-linear. Corolla tube glandular-puberulous outside, upper lip not much shorter than lower. *Flowers red*; *November to May*. Grassland. *Germishuizen* 596.

W S C N E

forbesii Benth.

Semiparasitic herb, up to 0,6 m high. Leaves unequally dentate, scabrid on both faces and on margin, lanceolate or oval-oblong. *Flowers ± 25 mm long, salmon-pink or orange*; *November to April*. Grassland. *Germishuizen* 5152.

W S C N E

gesnerioides (Willd.) Vatke ex Engl.

(= *Buchnera gesnerioides* Willd.,

= *S. orobanchioides* Benth.)

Parasitic herb, up to 300 mm tall, dusky when dry, puberulous or nearly glabrous. Leaves all scale-like. Calyx 5-ribbed. *Flowers numerous, spicate, pink, reddish purple, mauve, purple or white*; *January to April*. Bushveld and grassland. *Viljoen* 104.

W S C N E

junodii Schinz

Semiparasitic herb, up to 450 mm tall. Stems slender. Leaves linear, with long internodes. Calyx tube $\pm$ 10 mm long, ribbed. *Flowers rosy purple; January to April*. Grassland, sandy banks of streams. *Prosser 1784c*.

W S C N E

Sutera Roth (s. Afr.: 140 spp.)

7519000

Hiem. 1904. F.C. 4,2: 243–310.

Compton. 1931. Trans. R. Soc. S. Afr. 19: 307.

Verdoorn. 1933. Flower. Pl. S. Afr. 13: t. 485.

Codd. 1954. Flower. Pl. Afr. 30: t. 1162.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 43–56.

Hilliard & Burt. 1982. Notes R. bot. Gdn Edinb. 40,2: 291–293.

Hilliard & Burt. 1986. Notes R. bot. Gdn Edinb. 43,2: 216–217.

Hilliard. 1991. Edinb. J. Bot. 48: 342–346.

Hilliard. 1994. The Manuleae: 220–291.

debilis Hutch.

(= *S. hereroensis* auct., non Skan)

Herb, either annual or, presumably, a short-lived perennial. Stems $\pm$ 15–450 mm long. Leaves rhomboid to broadly ovate, abruptly contracted into a petiolar part, $\pm$ 3–11 mm long, margins with 3–6 pairs of coarse teeth or lobes themselves sometimes sparingly toothed. Flowers solitary in axils of upper leaves. Corolla tube glabrous inside. *Flowers with corolla lobes white or pale pink or mauve, throat yellow; December to February*. Shady cliff faces, under outcropping rocks. *Galpin 11655*.

W S C N E

floribunda (Benth.) Kuntze

(= *S. arcuata* Hiern,

= *S. macleana* Hiern)

Perennial herb, up to 1 m tall. Leaves usually ovate, largest blades 10–40 $\times$ 10–30 mm, short-petiolate, with shortly toothed margins. Inflorescence a panicle with flowers arranged in cymes or cymose racemes. *Flowers with lobes white or creamy white to shades of mauve, tube yellow; January to May*. Grassland, among boulders, or along streambanks and on forest margins. *Van Jaarsveld 497*.

W S C N E

griquensis Hiern

(= *S. burchellii* Hiern)

Coarse, bushy, spreading herb, up to 300 mm tall. Leaves ovate, $\pm$ 5–32 $\times$ 5–30 mm, often alternate, sometimes opposite but bases not connate. Inflorescence with flowers either solitary or in 3-flowered cymes in upper axils, arranged in racemes or loose panicles. Calyx obscurely bilabiate. *Flowers with corolla lobes white or very rarely mauve, tube yellow or orange; August and any time after rain*. Shelter of cliffs and rock outcrops. *Botha 2579*.

W S C N E

levis Hiern

(= *S. palustris* Hiern)

Bushy perennial herb, up to 0,6 m high. Leaves linear to narrowly elliptic, both surfaces glandular-puberulous. Inflorescence a much-branched panicle with

masses of small flowers on filiform pedicels. Corolla tube 2,5–3,5 mm long, 2,0–2,5 mm in throat. *Flowers with corolla lobes shades of mauve or pink, white sports not uncommon, tube yellow or orange; February, April, May, October and December*. Stony or rocky sites on grassy hillslopes, often among boulders. *Westfall 1022*.

W S C N E

neglecta (J.M. Wood & M.S. Evans) Hiern

(= *Chaenostoma neglectum* J.M. Wood & M.S. Evans)

Perennial herb with an irregularly shaped caudex. Stems erect or decumbent, $\pm$ 150–600 mm long. Leaves oblong to elliptic, $\pm$ 15–40 $\times$ 3,5–17,0 mm. Inflorescence with flowers in long terminal racemes, sometimes branching into corymbose panicles. *Flowers with corolla lobes mauve to bright purple-pink, occasionally with a white sport, tube yellow/orange; December to March*. Rocky grassland. *Welman 368*.

W S C N E

patriotica Hiern

(= *Diascia avasmontanum* Dinter)

Erect herb, often annual, but capable of perennating. Taproot simple, eventually woody. Leaves oblong to elliptic, primary leaves up to 17–30(–45) $\times$ 2–8(–15) mm, diminishing in size upwards. Inflorescence with flowers in long terminal racemes, eventually forming corymbose panicles, sometimes well-branched. *Flowers with corolla lobes shades of pink, mauve or blue-violet, tube yellow/orange; January, March, May and November*. Grassland, sandy flats, open woodland or scrub on sand, disturbed areas. *Liebenberg 51*.

W S C N E

polelensis Hilliard subsp. **fraterna** Hilliard

Perennial herb, well-branched from base and above. Leaves elliptic or ovate, cuneately contracted into a petiolar part, blade usually longer than broad, both surfaces glandular-pubescent as stems; glistening glands decidedly oblong. Inflorescence with flowers ultimately innumerable, solitary in leaf axils, passing into bracteate racemes, loosely paniced. *Flowers with corolla lobes usually white, tube yellow/orange; December to March*. Between rocky outcrops. *Galpin 14356*.

W S C N E

Teedia Rudolphi (s. Afr.: 2 spp.)

7494000

Hiem. 1904. F.C. 4,2: 210–212.

lucida Rudolphi

Shrublet, up to 1 m high. Leaves opposite, $\pm$ ovate, 60–80 $\times$ 30–50 mm, denticulate. Cymes dense and leafy. Fruit a globose berry, 7–8 mm in diameter, purplish black. *Flowers purple; July to June*. Mountain grassland, scrub forest, rocky grassland. *Codd & Dyer 9150*.

W S C N E

Tetraselago Junell (s. Afr.: 4 spp.) 7568040

Hilliard & Burt. 1977. Notes R. bot. Gdn Edinb. 35,2: 175–177.
Hilliard. 1994. The Manuleae: 534–540.

longituba (Rolfe) Hilliard & B.L. Burt

(= *Selago longituba* Rolfe)

Perennial herb, up to 1 m high, much-branched at base. Leaves solitary or somewhat fascicled, usually crowded. Corolla tube 8 mm long. *Flowers aggregated in a dense corymb; deep mauve-blue; January to March.* Mountain grassland. Arnold 308.

W S C N E

natalensis (Rolfe) Junell

(= *Selago natalensis* Rolfe)

Perennial herb, up to 0,7 m high. Leaves of main stem $\pm 30 \times 3$ mm, linear or lanceolate-linear, in approximate fascicles, denticulate above middle, with acute teeth. Corolla tube 3–5 mm long. *Flowers purple; December to June.* Grassland, mountainsides, hillsides. Killick & De Winter 8952.

W S C N E

nelsonii (Rolfe) Hilliard & B.L. Burt

(= *Selago nelsonii* Rolfe)

Leaves of main stem usually shorter than 20 mm, with blunt tip and blunt teeth, narrower than 3 mm. Spikes corymbosely arranged in compact heads. Corolla tube 3–4 mm long. *Flowers white or mauve; July to June.* Grassland. Van Wyk & Theron 4644.

W S C N E

wilmsii (Rolfe) Hilliard & B.L. Burt

(= *Selago aggregata* Rolfe,
= *Selago wilmsii* Rolfe)

Herbaceous shrublet, up to 500 mm tall. Leaves of main stem usually shorter than 20 mm, sharply acute with acute teeth, up to 5 mm wide, crowded. Inflorescence a dense corymb. Corolla tube 4,5–5,0 mm long. *Flowers purple; October to June.* Grassland. Germishuizen 3777.

W S C N E

Torenia L. (s. Afr.: 2 spp.)

7561000

Hepper. 1963. F.W.T.A. 2: 363.

spicata Engl.

(= *Canscora ramosissima* Baker,
= *T. inaequifolia* Engl.)

Erect herb, up to 150 mm tall. Stems branched, not tufted, quadrangular. Leaves sessile, basal leaves abscent. Calyx 5-lobed, bilabiate. Corolla 4–5 mm long. *Flowers shortly pedicellate, in capitate inflorescences, blue to purple or white; March to May.* Grassland or woodland. Hardy, Retief & Herman 5326.

W S C N E

thouarsii (Cham. & Schltdl.) Kuntze

(= *Nortenia thouarsii* Cham. & Schltdl.,
= *T. parviflora* Buch.-Ham. ex Benth.)

Leaves petiolate. Flowers distinctly pedicellate, pedicels 4–22 mm long. Grassland, marshes, swamps, riversides. No specimens in PRE.

W S C N E?

Veronica L. (s. Afr.: 7 spp.)

7579000

Tutin *et al.* 1972. Fl. Europ. 3: 242.

anagallis-aquatica L.

Perennial herb, up to 1 m high. Flowers in axillary racemes. Upper leaves ovate to narrowly ovate, sessile. Pedicels $\pm$ erect, at least in distal half. Capsule ovate to orbicular. *Flowers blue; October to April.* Vleis, streams, riverbanks. Bruce 463.

W S C N E

persica Poir.*

(= *V. tournefortii* C.C. Gmel.)

Procumbent herb. Stems 100–600 mm long. Leaves broadly ovate, 5–25 mm long, truncate at base. Flowers solitary in leaf axils. Corolla 8–12 mm in diameter. Capsule keeled with divergent lobes. *Flowers blue and white; July to October.* Cultivated ground. Native to Europe and Asia. Joffe 736.

W S C N E

Zaluzianskya A.F.W. Schmidt (s. Afr.:

63 spp.)

7523000

Hiern. 1904. F.C. 4,2: 333–354.

Merxmüller & Roessler. 1967. F.S.W.A. 126: 57–59.

Hilliard & Burt. 1983. Notes R. bot. Gdn Edinb. 41,1: 1–43.

Hilliard. 1990. Edinb. J. Bot. 47,3: 345–350.

Hilliard. 1994. The Manuleae: 460–522.

angustifolia Hilliard & B.L. Burt

Perennial herb, forming small mats or low cushions. Crown often with crowded vegetative buds. Stems several from crown, with wiry, spreading branching. Cauline leaves $\pm$ spreading, linear or narrowly oblong. Inflorescence few-flowered, a short dense spike. *Flowers crimson; February and April.* Crevices of outcropping rocks or around rocks in grassland. Balkwill 162.

W S C N E

distans Hiern

Herb, up to 400 mm tall. Stems ascending, leafy. Leaves elliptic to elliptic-ovate, 20–60 $\times$ 9–30 mm, gradually narrowed to petiolar part. Spike few to many-flowered, lax. Corolla tube 24–50 mm, lobes deeply notched, 4–10(–13) mm long. *Flowers carmine or pink outside, white inside; December to April.* Mountain-sides, hillsides. Smuts & Gillett 2358.

W S C N E

elongata Hilliard & B.L. Burt

Perennial herb, up to 0.6 m high. Leaves either entire or with a few small teeth, usually glabrous or with a few hairs on margins and midline. Corolla tube usually 30–40 mm. *Flowers slightly zygomorphic, arranged in lax, elongated spikes, reddish pink outside, white inside; October to April.* Grassland, among rock outcrops, on rocky or stony ridges. *Acocks 18719.*

W S C N E

glareosa Hilliard & B.L. Burt

Herb, up to 450 mm tall, often flowering in seedling stage, later several-stemmed from crown. Leaves usually more than twice as long as broad. *Flowers crimson outside, white inside; January.* Streambanks. *Galpin 9786.*

W S C N E

katharinae Hiern

Straggly herb, coarsely pubescent. Stems prostrate or decumbent, up to 600 mm long. Most leaves ovate or cuneate in outline, 10–30 × 4–25 mm, abruptly contracted to a petiolar part. Corolla tube 35–52 mm long, limb held horizontally, regular. *Flowers pink to crimson outside, white inside; July to June.* Damp and partially shaded places among rock outcrops and cliffs. *Codd 9502.*

W S C N E

microsiphon (Kuntze) K. Schum.

(= *Z. maritima* (L.f.) Walp. var. *breviflora* Hiern,
= *Z. maritima* (L.f.) Walp. var. *grandiflora* Hiern)

Perennial herb, up to 400 mm tall, with thick clump of vegetative buds on crown. Corolla limb zygomorphic,

held vertically, a few hairs present on anticus side of mouth. *Flowers wine-red outside, white inside; December to February.* Grassland. *Devenish 1858.*

W S C N E

pilosa Hilliard & B.L. Burt

Perennial herb, up to 350 mm tall. Stems either branched or with small axillary leaf tufts. Leaves mostly 7–17 mm broad, both surfaces pilose. Corolla tube 34–50 mm long, lobes deeply notched, 6–8 mm long. *Flowers red outside, white inside; April.* Rocky grassland. *Crundall sub PRE 40726.*

W S C N E

pulvinata Killick

Perennial herb, pulvinate with many crowded green leaf rosettes forming dense cushions or small mats. *Flowers with lobes crimson outside, white inside, tube flushed dark red.* Bare stony places. *Hilliard & Burt 6044.*

W S C N E

spathacea (Benth.) Walp.

(= *Z. maritima* (L.f.) Walp. var. *pubescens* Hiern)

Herb, up to 400 mm tall, developing thick clump of vegetative buds on crown. Stem simple. Cauline leaves mostly at least 3 mm broad. Corolla tube (36–)40–60 mm long, mouth with thick circlet of unicellular hairs. *Flowers crimson outside, white inside; October to March.* Grassland, edges of vleis and pans. *Codd & De Winter 3209.*

W S C N E

SELAGINACEAE

Herbs or shrublets. Leaves alternate, usually narrow and often in tufts, without stipules. Flowers irregular, sometimes 2-lipped. Petals 4 or 5, united. Stamens often 4, attached to corolla tube; anthers 1-locular. Ovary superior, with 2 locules, 1 of which is often sterile. Fruit indehiscent, often separating into 2 nutlets, each containing 1 seed.

Key after Dyer, Gen. 1: 558 (1975) and Hilliard & Burt in Notes R. bot. Gdn Edinb.
35,2: 175 (1977).

- 1a Corolla split down front ± half the length of the tube, expanded into 4 lobes; stamens 4 **Hebenstretia**
1b Corolla equally or unequally 4- or 5-lobed 2
2a Calyx (2)3(4)-partite; corolla ± equally 5-lobed or sub-bilabiate **Walafrida**
2b Calyx 5-dentate to 5-partite **Selago**

Hebenstretia L. (s. Afr.: 25 spp.) 7566000

Roessler. 1979. Mitt. bot. StSamml., Münch. 15: 1–89.
Roessler. 1982. Mitt. bot. StSamml., Münch. 18: 183–186.

angolensis Rolfe

(= *H. bequaertii* De Wild.)

Shrublet, up to 1 m high. Stems branched. Spikes at ends of branches. Leaves linear to linear-lanceolate, 0.5–2.0(–3.0) mm wide (length variable), usually entire. *Flowers white, yellow or orange with orange, red*

or reddish brown in throat; July to June. Grassland, rocky hillsides. *Burger 308.*

W S C N E

comosa Hochst.

(= *H. comosa* Hochst. var. *integrifolia* Rolfe,
= *H. elongata* Bolus ex Rolfe)

Erect herb, up to 300 mm tall. Stems several from rootstock. Leaves variable in width, usually linear and entire or wider and toothed. Spikes dense, up to 200

mm long. *Flowers white or yellow with orange in throat; July to January.* Grassland. *Coetzee 417.*

W S C N E

dura Choisy

(= *H. cooperi* Rolfe,
= *H. sutherlandii* Rolfe)

Branched, woody shrublet, up to 0,6 m high. Leaves variable, linear, lanceolate or elliptic-lanceolate. Spikes dense, 30–80 mm long. Bracts ovate, apex long attenuate. *Flowers white with orange throat or purple with red in throat; July to June.* Rocky and mountain ridge grassland. *Codd 8268.*

W S C N E

oatesii Rolfe subsp. **oatesii**

(= *H. polystachya* Harv. ex Rolfe)

Shrub, up to 1,8 m high. Base of stem unbranched, upper part densely branched, branches ending in spikes. Bracts gradually ending in an acuminate point. Leaves lanceolate to narrowly lanceolate, 40–75 × (3–)4–8 mm, sharply toothed to base. *Flowers white with yellow in throat; September to April.* Grassland, rocky outcrops. *Retief & Herman 132.*

W S C N E

oatesii Rolfe subsp. **rhodesiana** Roessler

Shrub, up to 1,8 m high. Base of stem unbranched, upper part densely branched, branches ending in spikes. Bracts ending abruptly in acuminate points. Leaves narrowly lanceolate, 30–40(–50) × 1–3(–4) mm, toothed only in upper part of lamina. *Flowers white with orange in throat; November to December.* Streambanks and riverbanks. *Smuts & Gillett 3237.*

W S C N E

rehmannii Rolfe

Perennial herb, up to 200 mm tall. Branched at base, branches at base woody. Leaves narrowly linear, 20–30 × 0,5(–1,0) mm. Corolla tube short, 8–9 mm long. *Flowers white; October to March.* Grassland, disturbed places. *Devenish 1047.*

W S C N E

Selago *L.* (s. Afr.: 117 spp.)

7568000

Rolfe. 1901. F.C. 5,1: 129–174.

Brenan. 1985. Kew Bull. 40,1: 81.

atherstonei Rolfe

Herb, up to 400 mm tall. Stems pubescent. Leaves lanceolate or oblong-lanceolate. Heads sessile, dense, not solitary, terminal and lateral at summit of branches. *Flowers white or brick-pink; December to January.* Mountain grassland. *Mohle 227.*

W S C N E

burkei Rolfe

Perennial herb, up to 450 mm tall. Branches canescent or minutely puberulous. Leaves linear, 2–3 mm long,

minutely puberulous. Spikes narrow, 3–6 mm long. Grassland. *Burke 500.*

W S C N E

capitellata Schltr.

Perennial herb, up to 450 mm tall. Leaves linear, sometimes crowded. Heads roundish, small, numerous, arranged in a narrow, ± compact panicle, towards summit of branches. *Flowers mauve; December to March.* Mountain grassland. *Drews 258.*

W S C N E

compacta Rolfe

Herb, up to 300 mm tall. Branches puberulous. Heads roundish, distinctly peduncled, arranged in compact corymbs at summit of branches. *Flowers white; December to March.* Grassland, often among stones. *Devenish 1119.*

W S C N E

elata Rolfe

Bushy shrublet, up to 1 m high. Leaves 12,5–30,0 mm long, oblong-lanceolate or elliptical. Racemes short, subcapitate when young, numerous, arranged in a lax or narrow panicle towards summit of branches. *Flowers white or mauve; July to June.* Mountain grassland, forest margins, streambanks. *Muller & Scheepers 25.*

W S C N E

hermannioides E. Mey.

Perennial herb, up to 300 mm tall. Branches closely and minutely canescent. Leaves oblong to ovate, tomentose or velvety. *Flowers arranged in small, compact, thyrsoid panicles, flowering branches secund; white and mauve; January to May.* Bushveld. *Burger 587.*

W S C N E

hyssopifolia E. Mey.

Shrublet, up to 1 m high, much-branched at base. Stems erect. Leaves fascicled, crowded, lanceolate or linear. Bracts elliptic-oblong, concave. *Flowers numerous, corymbosely arranged at summit of branches in a broad, lax panicle or more compact head; white; February to June.* Forest margins or grassland. *Germishuizen 3005.*

W S C N E

lydenburgensis Rolfe

Herb, up to 300 mm tall. Stems puberulous. Leaves lanceolate or oblong-lanceolate. Heads sessile, often rather lax, arranged in ± compact panicles at summit of branches. *Flowers white or purple; October to March.* Grassland, between rocks. *Germishuizen 3814.*

W S C N E

montis-shebae Brenan

Perennial herb, up to 400 mm tall. Leaves fasciculate, obovate-oblongeolate to oblanceolate, 5–13 × 1,5–5,0 mm. Bract oblong, obtuse at apex, only slightly exceeding calyx. Calyx lobes triangular-ovate, ± 5 mm long,

much shorter than tube. *Flowers blue-mauve to purple-blue; January to March.* Mountain grassland. *Meeuse 10071.*

W S C N E

muddii Rolfe

Herb, up to 300 mm tall. Stems pubescent. Leaves lanceolate or oblong-lanceolate. Heads solitary, dense, sessile or subsessile. *Flowers cream with purple tubes; October to April.* Montane grassland. *Krynauw 449.*

W S C N E

rehmannii Rolfe

Perennial herb, up to 200 mm tall. Hairs on stem short-reflexed. Heads mostly solitary. Bracts narrowly lanceolate. Calyx nearly glabrous, lobes subobtuse. *Flowers white; November to April.* Mountain grassland. *Vahrmeijer 2367.*

W S C N E

transvaalensis Rolfe

Leaves in approximate fascicles, lanceolate-linear, subacute, dentate above the middle with 2–4 pairs of teeth. Bracts lanceolate-linear, not concave. Flowers aggregate in a dense, corymbose panicle. No specimens in PRE.

W S C N E

villosa Rolfe

Herb, up to 400 mm tall. Branches pubescent or villous. Leaves linear-oblong or oblong. Heads long-peduncled. *Flowers white; March to April.* Grassland, rocky slopes. *Retief 2101.*

W S C N E

welwitschii Rolfe var. holubii (Rolfe) Brennan (= *S. holubii* Rolfe)

Perennial herb, up to 0.75 m high. Leaves linear, closely puberulous or nearly tomentose. Heads roundish or short, numerous, racemously disposed on short lateral branchlets. *Flowers white and light purple; January to March.* Bushveld or grassland. *Codd 8459.*

W S C N E

Walafrida E. Mey. (s. Afr.: 35 spp.) 7568010

Rolfe. 1901. F.C. 5,1: 116–129.

densiflora (Rolfe) Rolfe

Herb, up to 0.6 m high. Leaves narrow, often ± filiform. Spikes globose, at length somewhat elongated, dense, laterally arranged on short branchlets, forming somewhat elongated panicles at summit of branches. *Flowers white; October to April.* Grassland, hillsides. *Pott sub TRV 15101.*

W S C N E

paniculata (Thunb.) Rolfe

(= *Selago amboensis* Rolfe,
= *Selago paniculata* Thunb.)

Shrublet, up to 250 mm tall. Leaves linear, sometimes lanceolate-linear, not filiform. Spikes ovoid or oblong, usually dense, laterally arranged on short branchlets, forming elongated, narrow panicles towards summit of branches. *Flowers white; October to May.* Grassland and bushveld. *Meeuse 9238.*

W S C N E

saxatilis (E. Mey.) Rolfe

(= *Selago saxatilis* E. Mey.,
= *W. dineri* (Rolfe) Rolfe)

Shrublet, up to 500 mm tall. Leaves in approximate fascicles, linear or oblong-linear, obtuse, 2–4 mm long. Spikes small, laterally arranged on very short lateral branchlets in a compact panicle. *Flowers white; January to March.* Grassland. *Ubbink 1293.*

W S C N E

tenuifolia Rolfe

Semiwoody shrublet, up to 400 mm tall. Leaves filiform or nearly so, in approximate fascicles. Spikes arranged in dense corymbose panicles at ends of branches. *Flowers white; November to April.* Woodland, grassland, disturbed places. *Hanekom 2193.*

W S C N E

SIMAROUBACEAE

Trees. Leaves alternate, usually tufted at ends of branchlets, pinnate. Flowers usually bisexual. Calyx 4-partite. Petals 4, free, usually glandular at base within. Disc fleshy, annular or swollen. Stamens 4, alternating with petals and inserted on outside of disc. Ovary superior, often 2–5-lobed, 1–5-locular. Fruit dry, sharply 4-angled, at length separating into four 1-seeded cocci.

Kirkia Oliv. (s. Afr.: 3 spp.)

4128000

Wild & Phipps. 1963. F.Z. 2: 214–215.
Immelman. 1986. F.S.A. 18,3: 1.

acuminata Oliv.

(= *K. pubescens* Burtt Davy)

Tree, up to 17 m high. Leaves usually fewer than 10 pairs of leaflets, leaflets elliptic, 29–88 × 10–24 mm,

base slightly oblique, margin crenate, bright scarlet in autumn. *Flowers white to cream; November to December.* Bushveld, rocky slopes. *Story 6514.*

W S C N E

wilmsii Engl.
Tree, up to 20 m high. Bark not spotted. Leaves always with 10 or more pairs of leaflets, leaflets up to 6 mm wide. Mericarps 4. Fruit 1,5 times longer than wide.

Flowers cream to greenish white; October to January. Woodland, bushveld, kloofs, rocky hillsides. *Krynauw* 890.

W S C N E

SOLANACEAE

Herbs, shrubs or small trees. Leaves alternate, often with strong scent when crushed, without stipules. Flowers regular. Petals 5, united. Stamens 5, arising from corolla tube; anthers usually coherent but not fused. Ovary superior. Fruit a usually many-seeded berry or prickly capsule.

Key after Dyer, Gen. 1: 538 (1975).

1a	Calyx becoming enlarged, bladdery and enclosing fruit	2
1b	Calyx not inflated	4
2a	Calyx lobes winged down back	<i>Nicandra</i>
2b	Calyx lobes not winged	3
3a	Flowers fascicled	<i>Withania</i>
3b	Flowers solitary	<i>Physalis</i>
4a	Fruit a berry	5
4b	Fruit a capsule	7
5a	Stamens inserted in corolla mouth or throat; anthers dehiscing by pores	<i>Solanum</i>
5b	Stamens inserted near base of corolla tube; anthers dehiscing by slits	6
6a	Shrubs or shrublets with thorn-like branchlets; ovary not on stout foot within disc	<i>Lycium</i>
6b	Shrubs unarmed, ovary on short, stout foot within disc	<i>Cestrum</i>
7a	Capsule armed with spines	<i>Datura</i>
7b	Capsule unarmed	<i>Nicotiana</i>

Cestrum *L.* (s. Afr.: 4 spp.) 7420000
Thornburn. 1934. Onderstepoort Jl. Vet. Res. 2,2: 667–669.
Bailey. 1977. Hortus Third: 253.

15–20 mm long. Berries purplish black. *Flowers light green with creamy yellow lobes; January to August.* Disturbed places. Native to South America. *Buitendag* 473.

W S C N E

aurantiacum *Lindl.**
Small tree or climbing shrub, 1,8–6,0 m high. Leaves lanceolate or ovate, up to 150 mm long, acute or acuminate. Inflorescence terminal, paniculate. Calyx up to 10 mm long. Corolla 20–25 mm long. Berries white. *Flowers orange; November and February.* Disturbed places. Native to South America. *Stirton* 7268.

W S C N E

Datura *L.* (s. Afr.: 4 spp.) 7415000
Henderson & Anderson. 1966. Common weeds in South Africa: 264–267.
Bailey. 1977. Hortus Third: 364–365.

elegans (*Brongn.*) *Schldtl.**
(= *C. purpureum* (Lindl.) Standl.)
Small tree or climbing shrub, up to 2 m high. Young branches hairy. Leaves ovate to ovate-lanceolate, up to 130 mm long, acute to acuminate. Inflorescence a loose terminal cluster, nodding. Calyx 6 mm long. Corolla 15–22 mm long, constricted near mouth. Berries red. *Flowers crimson to reddish purple; October to November.* Disturbed areas. Native to South America. *Powrie* 409.

W S C N E

ferox *L.**
Annual herb, up to 1 m high. Pedicels slender, pubescent, up to 10 mm long. Calyx 25 mm long. Corolla up to 65 mm long. Fruits up to 40 mm in diameter, covered with stout spreading spines up to 25 mm long. *Flowers white or cream; August to April.* Waste places and cultivated lands. Native to Europe and Asia. *Hanekom* 1686.

W S C N E

laevigatum *Schldtl.**
Shrub, 6–15 m high. Leaves elliptic-lanceolate, 30–100 × 10–38 mm, acuminate. Inflorescence an axillary, subspicate cymose cluster. Calyx 3 mm long. Corolla

innoxia *Mill.**
Annual or perennial herb, up to 1 m or more high. Pedicels pubescent, up to 20 mm long. Calyx 95–100 mm long. Corolla up to 200 mm long. Fruits covered with numerous narrow, stiff spines up to 15 mm long. Fruits and spines pubescent. *Flowers pink or lavender;*

September to April. Weed of waste places. Native to North America. *Codd 8651.*

W S C N E

metel L.*

(= *D. fastuosa* L.)

Annual herb, up to 1,5 m or higher. Pedicels up to 10 mm long. Calyx up to 50 mm long. Corolla 160–180 mm long. Fruit tubercled or covered with short spines, densely short strigose-pubescent. *Flowers white, yellow or purple; August and possibly December.* Disturbed places. Native to Europe and Asia. *Foye 155104.*

W S C N E

stramonium L.*

(= *D. tatula* L.)

Annual herb, up to 1,5 m high. Pedicels 5 mm long. Calyx 40 mm long. Corolla up to 100 mm long. Fruit over 30 mm in diameter, covered with spreading spines up to 10 mm long. *Flowers white, mauve or purplish; July to June.* Disturbed places; weed. Native to North America. *Hanekom 1740.*

W S C N E

Lycium L. (s. Afr.: 16 spp.)

7379000

Wright. 1904. F.C. 4.2: 109–118.

Dean. 1974. Unpublished report.

cinereum Thunb. sens. lat.

(= *L. oxycladum* Miers,

= *L. tenue* Willd.)

Shrub, up to 1,5 m high. Leaves and young branches glabrous. Leaves linear-lanceolate, obtuse, 4–8 × 1–2 mm. Peduncles 2–3 mm long. Corolla ± 5–8 mm long. Stamens included, filaments villous. *Flowers mauve; July to June.* Grassland or woodland. *Codd 6592.*

W S C N E

hirsutum Dunal

(= *L. glandulosissimum* Schinz,

= *L. pilosum* Dammer)

Shrub, 2–3 m high. Leaves and young branches pubescent. Corolla tube 15 mm long or longer. *Flowers pale mauve; April to August.* Banks of rivers. *Van Wyk 552.*

W S C N E

schizocalyx C.H. Wright

Shrub, 1–3 m high. Leaves and young branches glabrous. Leaves linear to narrowly oblanceolate. Peduncles 6–8 mm long. Calyx deeply divided into linear-oblong lobes. Corolla ± 10 mm long. Style and stamens exserted, filaments hairy at base. *Flowers mauve; September to May.* Savanna. *Henning 6.*

W S C N E

shawii Roem. & Schult.

(= *L. albiflorum* Dammer)

Shrub, up to 2 m high. Leaves and young branches glabrous. Leaves linear-lanceolate to ovate-spathulate, 1,5–4,0 times as long as broad. Peduncles 4 mm long

or longer. Corolla 9–16 mm long. Style and stamens not exserted, filaments ± glabrous. *Flowers white or mauve; December to July.* Savanna. *Van Wyk 5703.*

W S C N E

Nicandra Adans. (s. Afr.: 1 sp.)

7377000

Wright. 1904. F.C. 4.2: 108–109.

physalodes (L.) Gaertn.*

(= *Atropa physalodes* L.)

Annual herb, up to ± 2 m high. Leaves ovate-oblong, sinuate-serrate, acuminate, up to 130 × 75 mm, petiolate. Flowers solitary. Calyx segments cordate, enlarging and completely enclosing berry. *Flowers purple to mauve; October to July.* Herb of cultivation, occurring in disturbed areas. Native to South America. *Scheepers 266.*

W S C N E

Nicotiana L. (s. Afr.: 4 spp.)

7434000

Henderson & Anderson. 1966. Common weeds in South Africa: 270–271.

Bailey. 1977. Hortus Third: 766.

glauca Graham*

Small tree or shrub, 3–9 m high. Leaves and stems glabrous, glaucous. Leaves ovate to lanceolate, 50–250 mm long, distinctly petiolate. Corolla tube 30–45 mm long, dilated above, 10 mm across, somewhat contracted at mouth, limb narrow; shallowly and acutely lobed. *Flowers yellow; August to May.* Weed of roadsides, waste places and riverbanks. Native to South America. *Codd 6186.*

W S C N E

longiflora Cav.*

Glabrescent annual or perennial herb, 0,45–1,05 m high. Leaves ovate to lanceolate, sessile. Corolla tube 40–115 mm long, dilated abruptly below mouth, limb ± 45 mm across, deeply acuminate lobed. *Flowers white to lavender inside, purplish grey outside; October to January.* Roadsides and disturbed places. Native to South America. *Ubbink 467.*

W S C N E

tabacum L.*

Viscid annual or perennial herb, 0,9–3,0 m high. Leaves ovate to lanceolate, sessile. Corolla tube 12–18 mm long, dilated throat 25–40 mm long, limb ± 25 mm across, shallowly acuminate lobed. *Flowers greenish cream to pink or red; September.* Escape from cultivation. Native to tropical America. *Jenkins 7227.*

W S C N E

Physalis L. (s. Afr.: 7 spp.)

7401000

Wright. 1904. F.C. 4.2: 106.

Correll & Johnston. 1970. Manual Vasc. Pl. Texas: 1388–1391.

Tutin *et al.* 1972. Fl. Europ. 3: 196.

angulata L.*

Glabrous or sparsely hairy annual herb, 0.25–1.00 m high. Leaves ovate to ovate-lanceolate, deeply and irregularly incised-toothed to undulate-toothed, sometimes entire, 50–110 × 35–80 mm, petiolate. Corolla lobes spreading to ± 10 mm diam. Anthers 1.0–2.5 mm long, bluish or violet. Fruiting calyx 10-angled or 10-ribbed and nearly terete. *Flowers yellowish, sometimes with indistinct spots; July to June.* Weed of cultivation, in disturbed areas. Native to America. *Hanekom 1336.*

W	S	C	N	E
---	---	---	---	---

peruviana L.*

Perennial herb, 0.3–1.0 m high, with dense indumentum. Leaves broadly ovate, acuminate, cordate at base (50–)70–110(–150) × 40–70(–90) mm, entire or irregularly dentate-sinuate, petiolate. Flowers solitary. Calyx enlarging and enclosing berry. Anthers 3.5–4.0 mm long, purple. *Flowers yellow with 5 large dark purple spots at base of lobes; October to May.* Weed of cultivation spreading to disturbed areas, often near water in shady places. Native to South America. *Stalmans 252.*

W	S	C	N	E
---	---	---	---	---

viscosa L.*

Erect or decumbent perennial herb, up to 300 mm tall, covered with stellate or variously branched trichomes. Anthers yellow, ± 3 mm long. *Flowers yellowish, usually dark-maculate; October to March.* Weed in disturbed places. Native to South America. *Codd 4779.*

W	S	C	N	E
---	---	---	---	---

Solanum L. (s. Afr.: 65 spp.)

7407000

Wright. 1904. F.C. 4.2: 88–105.
Wright. 1906. F.T.A. 4.2: 207–246.
Moore. 1920. J. Bot., Lond. 58: 78.
Heine. 1960. Kew Bull. 14: 245.
Henderson & Anderson. 1966. Common weeds in South Africa: 276–285.
Tutin *et al.* 1972. Fl. Europ. 3: 197–199.
Bailey. 1977. Hortus Third: 1054–1056.
Hepper. 1978. J. Linn. Soc., Bot. 76: 287–292.
Symon. 1981. J. Adelaide Bot. Gard. 4: 1–367.

acanthoideum E. Mey.

Shrub, up to 2.5 m high. Stems and leaves spiny. Spines not exceeding 2 mm across base, straight. Leaves deeply 1- or 2-pinnately lobed, lobes acute. Inflorescence lateral. Corolla 32–36 mm in diameter, lobes broad. Fruit yellow. *Flowers white; December and May.* In and around settlements, generally in forested areas. *Crawford 330.*

W	S	C	N	E
---	---	---	---	---

aculeastrum Dunal

Small tree or shrub, 1–6 m high. Stems and leaves spiny. Spines 5 mm across base, curved. Leaves deeply sinuately lobed, discolorous. Inflorescence lateral. Fruit yellow. *Flowers white or pale violet; September to April.* Forest margins and in grassland. *Marais 126.*

W	S	C	N	E
---	---	---	---	---

aculeatissimum Jacq.

(= *S. ciliatum* Lam.)

Spiny subshrub, 0.6–0.9 m high. Spines not exceeding 2 mm across base, straight. Leaves deeply pinnately lobed, lobes acute, with scattered simple hairs. Inflorescence lateral. Corolla 20–30 mm in diameter, lobes narrow. Berries orange-red. *Flowers white; October to February.* In forest. *Devenish 1001* (flowers), *Stalmans 542* (fruit).

W	S	C	N	E
---	---	---	---	---

anguivi Lam.

(= *S. indicum* non L.)

Spiny shrub, 0.5–3.0 m high. Spines straight. Leaves deeply pinnatisect, sparsely stellate-pubescent above, densely so beneath. Inflorescence a few-flowered cyme. Corolla 9–13 mm in diameter. Berry red or orange. *Flowers pale violet, white; July to June.* Forests and thickets, often in association with human habitation. *Crawford 442.*

W	S	C	N	E
---	---	---	---	---

burbankii Bitter

Annual herb, up to 0.6 m high, not spiny. Leaves weakly and irregularly toothed. Flowers in few-flowered axillary cymes. Corolla 6 mm in diameter. Berries black or orange. *Flowers white; March to May.* Disturbed places, usually in shade. *Henrici 1597.*

W	S	C	N	E
---	---	---	---	---

capense L.

Semi-erect or prostrate, spiny shrub. Spines curved. Leaves shallowly sinuately lobed, glabrous or stellate-pubescent. Inflorescence lateral. Corolla 12 mm or less in diameter. Fruits orange. *Flowers blue or white; October to February.* Bushland. *Codd 3458.*

W	S	C	N	E
---	---	---	---	---

catombelense Peyr.

(= *S. rautanenii* Schinz,
= *S. sparsiflorum* Dammer)

Shrub, up to 0.6 m high. Spines sometimes present, curved. Leaves entire, with stellate hairs. Inflorescence a lateral cyme, corymbose. Corolla less than 18 mm in diameter. Fruit scarlet or orange. *Flowers white to violet; September to June.* Disturbed places. *Codd 4843.*

W	S	C	N	E
---	---	---	---	---

chenopodioides Lam.

(= *S. gracile* Dunal)

Shrub, up to 1 m high, unarmed. Leaves entire or with shallowly lobed margin, slightly undulate, pubescent with short, erect or curved hairs. Inflorescence an umbel. Corolla 15–20 mm in diameter. Berries black. *Flowers white; August to April.* In open disturbed ground. *Joffe 459.*

W	S	C	N	E
---	---	---	---	---

coccineum Jacq.

Spiny shrub, up to 0.6 m high. Spines straight. Leaves very shallowly sinuate, stellate-hairy. Flowers 3–5 to

gether. Corolla 12 mm or less in diameter, lobes lanceolate, acuminate. Fruits red. *Flowers mauve; November to March*. Disturbed places. *Van der Schijff 3958*.

W S C N E

didymanthum Dunal var. **pluriflorum** Dunal

Shrub, up to 2 m high, with few spines. Leaves sinuately 5–7-lobed, acute at base, stellately hairy. Cymes 4–8-flowered. Corolla 10–18 mm in diameter. *Flowers mauve; February*. Junod 4292.

W S C N E

elaeagnifolium Cav.*

Small spiny shrub, up to 0.6 m high. Spines straight. Leaves entire to sinuate, stellate-pubescent. Flowers in corymbose cymes towards apices of branches. Corolla up to 30 mm in diameter. Fruits yellowish. *Flowers mauve; October to March and in June*. Weed of cultivation and disturbed land. Native to America. *Van Wyk 5225*.

W S C N E

giganteum Jacq.

(= *S. niveum* Thunb.)

Tree, up to 4 m high. Branches spiny. Spines short, conical and broad-based. Leaves entire, discolourous, glabrous above, white tomentose beneath. Inflorescence terminal. Corolla 10 mm in diameter. Fruits red. *Flowers violet-purple; November to April*. Forest and wooded kloofs. *Welman 432* (flowers), *Stalmans 555* (fruit).

W S C N E

incanum L.

(= *S. sanctum* L.)

Spiny shrub, 0.9–1.5 m high. Spines curved. Leaves sinuate, obtuse at base, with dense stellate tomentum. Flowers solitary or few together. Corolla 18–30 mm in diameter. Fruit yellow. *Flowers purple or white; August to April*. Disturbed places. *Hanekom 1487*.

W S C N E

kwebense N.E. Br.

(= *S. chondropetalum* Dammer,
= *S. tenuiramisum* Dammer)

Shrub, 1.2–1.5 m high. Branches unarmed or with few small spines. Leaves entire, minute stellately hairy, glabrescent. Flowers in peduncled cymes. Corolla 17–20 mm in diameter, lobes linear. Fruits red. *Flowers white or mauve; October to April*. Open, sandy or rocky ground. *Codd 5984*.

W S C N E

leucophaeum Dunal

Sprawling, spiny shrub, up to 400 mm tall. Spines small, straight or slightly curved. Leaves sinuate-repand, with few stellate hairs. Flowers solitary. Corolla 12 mm in diameter. Fruits yellow, partly enclosed by prickly calyx. *Flowers white or pale violet; December*. Disturbed places. *Venter 11644*.

W S C N E

mauritanium Scop.*

(= *S. auriculatum* Aiton)

Small tree or shrub, up to 5 m high, unarmed. Leaves entire, densely stellate-floccose beneath, velvety stellate-pubescent above. Inflorescence terminal. Corolla 12 mm in diameter. Fruit yellowish. *Flowers violet or purple; August to April*. Weed of forests and other disturbed places. Native to South America. *Duggan & Henderson 10*.

W S C N E

nigrum L.*

Annual or biennial herb, up to 1 m high, unarmed. Leaves sinuate-dentate or rarely entire, ± pubescent with simple hairs. Flowers in umbellate cymes. Corolla 10–14 mm in diameter. Fruit black, rarely red or yellow. *Flowers white; October to July*. Weed of open, fairly dry areas. Native to Europe. *Van Wyk 41*.

W S C N E

nodiflorum Jacq.

Herb, up to 1.5 m high, unarmed. Leaves entire, glabrous. Cymes umbellate. Corolla 8–10 mm in diameter. Fruit black. *Flowers white; January to June*. Disturbed places. *Codd s.n.*

W S C N E

panduriforme E. Mey.

Spiny shrub, up to 1.5 m high. Spines small, straight. Leaves oblong-lanceolate, sinuate, stellate-pubescent. Cymes racemose. Corolla 25 mm in diameter. Fruit yellow. *Flowers mauve; July to June*. Disturbed places. *Codd 4829*.

W S C N E

pseudocapsicum L.*

Shrub, 0.9–1.2 m high, unarmed. Leaves repand, glabrous. Cymes umbellate, few-flowered, sometimes solitary. Corolla 10 mm in diameter. Fruit red or orange-red. *Flowers white; October to May*. Disturbed places along roadsides and streambanks. Native to Europe and Asia. *Raal 1066*.

W S C N E

retroflexum Dunal

Herb, up to 500 mm tall, unarmed. Leaves shallowly but distinctly lobed, with short simple hairs. Inflorescence a small umbel. Corolla 12–15 mm in diameter. Berries black. *Flowers white; October to May*. In kloofs and streambanks, often in shade. *Galpin M747*.

W S C N E

rigescens Jacq.

(= *S. rubetorum* Dunal)

Spiny shrub, up to 0.6 m high. Spines straight. Leaves sinuately 5–7-lobed, stellate-hairy. Cymes racemose, few-flowered. Corolla 20 mm in diameter. Fruit black or reddish. *Flowers violet or deep purple; October to March and in June*. Streambanks. *Westfall 771*.

W S C N E

rogersii *S. Moore*

Spinescent shrub. Spines long, straight. Leaves ovate, pinnatifid, lobes acute, glandular pubescent intermixed with stellate hairs. Cymes axillary, many-flowered. Corolla $\pm$ 25 mm in diameter. Berries red? No specimens in PRE.

W	S	C	N	E
---	---	---	---	---

seaforthianum *Andrews**

Climber, up to 6 m high, unarmed. Leaves pinnate or unequally pinnatifid, glabrous. Inflorescence a many-flowered axillary cyme. Corolla 25 mm in diameter. Berries red. *Flowers blue to purple; December to April.* Disturbed places and along watercourses. Native to South America. *Scheepers 265.*

W	S	C	N	E
---	---	---	---	---

sisymbriifolium *Lam.**

Spiny shrub, up to 1.5 m high. Spines straight. Leaves deeply pinnately lobed, stellate-pubescent and sparsely glandular. Inflorescence a short lateral raceme. Fruits enclosed in enlarged spiny calyces, red. *Flowers white, cream or bluish; July to June.* Waste places, roadsides and trampled veld. Native to South America. *Codd 2548.*

W	S	C	N	E
---	---	---	---	---

supinum *Dunal*

(= *S. aranoideum* Dammer,
= *S. lyratifolium* Dammer)

Sprawling, spiny shrub, up to 400 mm tall. Spines straight. Leaves deeply sinuately and obtusely lobed with scattered stellate hairs. Flowers solitary. Calyx spiny, enlarging in fruit. Corolla 15 mm in diameter. Berry yellow. *Flowers pale violet or white; October to February.* Wooded grassland. *Hanekom 1485.*

W	S	C	N	E
---	---	---	---	---

terminale *Forssk.* subsp. **terminale**

(= *S. bifurcum* Hochst.)

Climbing shrub, unarmed. Leaves entire, ovate or ovate-lanceolate, sparingly pilose. Inflorescence a many-flow-

ered umbellate terminal cyme. Corolla 15 mm in diameter. Fruits red. *Flowers deep violet to white; October to July.* In forest and bush. *Codd 6844.*

W	S	C	N	E
---	---	---	---	---

tomentosum *L.*

Spiny shrub, 0.45–6.00 m high. Spines straight or slightly curved. Leaves sinuate or rarely entire, clothed with yellowish stellate hairs. Inflorescence an umbellate few-flowered cyme. Corolla 12 mm in diameter. Fruit dull orange. *Flowers purple, blue; January.* Woodland. *Mogg 643.*

W	S	C	N	E
---	---	---	---	---

villosum *Mill.*

Subshrub or herb, up to 0.7 m high, unarmed. Leaves almost entire or with 5–7 shallow lobes, greyish villous-pubescent with simple or glandular hairs. Inflorescence a subumbellate raceme. Corolla 12 mm in diameter. Berries dull orange-red or yellow. *Flowers white; January.* *Pole Evans H13549.*

W	S	C	N	E
---	---	---	---	---

Withania *Pauquy* (s. Afr.: 1 sp.)

7400000

Wright. 1904. F.C. 4,2: 107–108.

Podlech & Roessler. 1969. F.S.W.A. 124: 17.

somnifera (*L.*) *Dunal*

(= *Physalis somnifera* L.,

= *W. microphysalis* Suess.)

Shrub, up to 1.5 m high. Leaves ovate, obovate or oblong, entire or very slightly sinuate, shortly petiolate, 30–150 $\times$ 10–70 mm. Flowers 4–6 in axillary fascicles. Calyx densely tomentose outside, enlarging and completely enclosing berry. *Flowers yellow or yellowish green; October to July.* Grassland, woodland, among rocks on mountainsides; often near water, tending to become weedy in disturbed places. *Van Vuuren 1870.*

W	S	C	N	E
---	---	---	---	---

SPHENOCLEACEAE

Annuals associated with water, erect, glabrous, somewhat soft and sparsely branched. Leaves alternate, petioled or subsessile, lanceolate to oblanceolate. Flowers in dense bracteate spikes. Calyx 5-partite. Corolla 5-lobed. Stamens 5, inserted in middle of corolla tube. Ovary half-inferior, 2-locular. Fruit a depressed, subglobose capsule, with operculum falling with calyx lobes.

Sphenoclea *Gaertn.* (s. Afr.: 1 sp.) 8680000

Roessler. 1966. F.S.W.A. 138: 1.

zeylanica *Gaertn.*

Annual herb, up to 1 m high. Leaves alternate, simple, shortly petioled or subsessile, lanceolate to oblanceo-

late. *Flowers* compressed apically in dense, bracteate spikes, *white; March.* Wet soil near water. *Van der Schijff 2593.*

W	S	C	N	E
---	---	---	---	---

STERCULIACEAE

Herbs, shrubs or trees. Leaves alternate, usually with star-shaped hairs, often palmately lobed, with stipules. Flowers regular. Petals 5 or 0, free or adnate to anther tube at base, twisted in bud. Stamens 5 and opposite petals, or up to 15, free or united into short tube. Staminalodes sometimes present. Ovary superior, 1–5-locular. Fruit a capsule.

Key after Dyer, Gen. 1: 363 (1975).

- 1a Petals absent; flowers unisexual or sometimes bisexual; mainly trees 2
- 1b Petals present; flowers bisexual; mostly perennial herbs, shrublets or undershrubs, sometimes shrubs or small trees 3
- 2a Stamens numerous, with anthers capitate on apex of staminal column *Sterculia*
- 2b Stamens 10(–12) with anthers in regular or wavy whorl around apex of staminal column *Cola*
- 3a Staminalodes conspicuous 4
- 3b Staminalodes 0 or inconspicuous 5
- 4a Fibrous herbs or undershrubs; petals becoming detached and twisted above ovary; fertile stamens 5 *Melhania*
- 4b Shrubs or small trees; petals becoming papery, persistent; fertile stamens 10–12 *Dombeya*
- 5a Ovary 5-locular; capsule many-seeded; filaments variably expanded *Hermannia*
- 5b Ovary 1-locular, unequal; style lateral; capsule 1(2)-seeded *Waltheria*

Cola Schott & Endl. (s. Afr.: 2 spp.) 5091000

Verdoorn. 1981. *Bothalia* 13: 277–279.

greenwayi Brenan

(= *C. microcarpa* Brenan)

Tree, up to 20 m high. Petiole with swollen apical portion tomentose. Fruit subglobose to oblique ellipsoid, 10 × 13–18 × 20 mm, rind rather thin and brittle at maturity. *Flowers brownish*. Forest. *Arnold 1621*.

W S C N E

Dombeya Cav. (s. Afr.: 8 spp.) 5053000

Wild. 1961. *F.Z.* 1: 518–528.

Verdoorn & Herman. 1986. *Bothalia* 16: 1–9.

autumnalis I. Verd.

Shrub or small tree, up to 5 m high. Branchlets slender, leafy. Leaves orbicular, 15–50 × 10–50 mm. Cymes in axils of upper leaves often overtopping them, ± 25 mm long. *Flowers white, turning cinnamon-rufous with age; January to August*. Mesophytic, well-wooded slopes, riverine bush. *Nel 188*.

W S C N E

burgessiae Gerrard ex Harv.

(= *D. rosea* Baker f.)

Shrub or slender tree, up to 4 m high. Leaves broadly ovate, 60–200 × 50–190 mm, deeply cordate at base, sparsely to very densely pubescent with stellate and tufted hairs. Petals up to 20 mm long. *Flowers white or pale pink, turning light brown with age; July to June*. Forest margins, wooded streambanks, kloofs, grassy slopes. *Stalmans 28*.

W S C N E

cymosa Harv.

Small tree or shrub, up to 3 m high. Leaves rather thin in texture, ovate, gradually narrowing in upper third and then abruptly acuminate towards apex, smaller than 70 × 60 mm. Flowers 6–8 mm long, 4–5 mm broad. Peduncles with short stellate hairs. *Flowers white, turn-*

ing rusty brown with age; April to July. River and streambanks, forest margins, woodland, stony slopes in gorges. *Onderstall 615*.

W S C N E

kirkii Mast.

(= *D. gilgiana* K. Schum.)

Shrub, up to 5 m high. Leaves ovate, 40–120 × 3–11 mm. Pubescence on pedicels and peduncles mostly stellate-tomentose, intermixed with long (up to 1.5 mm), thin, acute spreading hairs. Petals 8–10 mm long. *Flowers white, turning light brown with age; May*. Dry riverbanks. *Van der Schijff 3810*.

W S C N E

pulchra N.E. Br.

Shrub, up to 4 m high. Leaves distinctly discolorous, lower surface metallic-grey with short dense indumentum of fine hairs giving it a felted appearance. Petals 12–20 mm long. *Flowers white with red centre, turning light cinnamon-rufous with age; January to May*. Rocky hills, streambanks, tall grass with scattered shrubs. *Muller 2447*.

W S C N E

rotundifolia (Hochst.) Planch. var. *rotundifolia*

Tree or shrub, up to 10 m high. Leaves suborbicular, coarse, with prominent reticulate veins beneath. Petals 7–10 mm long. Ovary tomentellous with stellately pubescent scales as well as setose with tufted bristle-like suberect hairs. *Flowers white, turning light cinnamon-brown; August to November*. Bushveld. *Codd 7582*.

W S C N E

Hermannia L. (s. Afr.: 149 spp.) 5056000

Wild. 1961. *F.Z.* 1: 537–549.

Verdoorn. 1980. *Bothalia* 13: 1–63.

De Winter. Pers. comm.

antonii I. Verd.

(= *H. rehmannii* (Szyszyl.) K. Schum.,
= *Mahernia rehmannii* Szyszyl.)

Erect suffrutex, up to 0,6 m high. Leaves linear-oblong to oblong, 15–50 × 5–15 mm. Stipules ovate, 4–6 mm long. Inflorescence with flowers often congested on dwarf, axillary branchlets towards ends of branches, forming a paniculate inflorescence. Calyx stellate-tomentose. *Flowers yellow; February to April.* Bushveld and grassland. *Codd 2700.*

W	S	C	N	E
---	---	---	---	---

bicolor Engl. & Dinter

Perennial herb. Stems prostrate, decumbent or erect. Young parts with conspicuous sessile glands, older parts glabrous. Leaves narrowly elliptic, margin incised. Inflorescence a 2-flowered cyme. *Flowers orange-pink; September to May.* Red sand. *Mogg 87876.*

W	S	C	N	E
---	---	---	---	---

boraginiflora Hook.

(= *H. tephrocarpa* K. Schum.)

Suffrutex, up to 200 mm tall. Branchlets mainly appressed stellate-pubescent. Leaves elliptic, oblong or obovate-oblong, up to 27 × 14 mm. Inflorescence axillary, 1-flowered. Capsule densely stellate-pubescent all over. *Flowers pink, mauve or purple; July to June.* Grassland, rocky hillsides, mountainsides, red loamy soils, old lands. *Leistner & Mauve 3264.*

W	S	C	N	E
---	---	---	---	---

bryoniifolia Burch.

Suffrutex, up to 150 mm tall. Leaves ovate-oblong, lobulate-crenate, fairly coarsely stellate-pubescent. Inflorescence: 1- or 2-flowered cymes in axils of crowded upper leaves. Calyx not subinflated, shorter than 4 mm on dried specimens. *Flowers wine-red; November.* Loamy soil on hills, among rocks, rocky ledges. *Venter 408.*

W	S	C	N	E
---	---	---	---	---

burkei Burt Davy

Yellowish green perennial herb to subshrub, with prostrate to suberect branches up to 0,8 m long. Stipules ovate, serrate. Leaves densely tomentose below, thinly tomentose above, 30–55 × 25–30 mm, ovate-oblong. Inflorescence: clusters of 2-flowered cymes concentrated towards ends of branches, leaves diminishing in size thus forming pseudopanicles. *Flowers pale yellow to orange; July to June.* Bushveld, rocky, stony or disturbed sites. *Codd 2765.*

W	S	C	N	E
---	---	---	---	---

coccocarpa (Eckl. & Zeyh.) Kuntze

(= *Mahernia coccocarpa* Eckl. & Zeyh.)

Perennial herb, up to 150 mm tall, very variable. Stalked glands present. Stems creeping to suberect. Leaves narrow, more than 4 times as long as broad, often reddish brown to purplish along margin. Inflorescence: 2-flowered cymes on long peduncles. *Flowers*

pink, mauve, purplish to blue; July to June. Grassland, disturbed places, edges of vleis. *Turner 1213.*

W	S	C	N	E
---	---	---	---	---

comosa Burch. ex DC.

(= *H. ausana* Dinter,
= *H. leucophylla* Presl)

Perennial herb, up to 200 mm tall. Leaves long-petioled, blade oblong to oblong-obovate, 15–50 × 6–35 mm, pubescent with fine stellate hairs on both surfaces, but more often densely so to tomentose underneath. Inflorescence: usually 2-flowered cymes, 2 or 3 developing at apices of branches and in axils of upper leaves. Calyx inflated, narrowed at mouth. Petals 10 mm long. *Flowers lemon-yellow; October to January.* Grassland, disturbed areas. *Germishuizen 4006.*

W	S	C	N	E
---	---	---	---	---

cordata (E. Mey. ex E. Phillips) De Winter

Perennial herb, with creeping to upward rising branches. Leaves ovate to suborbicular, base cordate, upper surface dark green, rough with sparse, coarse, stellate hairs and very deeply sunken veins, lower surface whitish felty. Stipules lacerate. Inflorescence: clusters of 2-flowered cymes concentrated towards ends of branches with leaves usually almost reduced to bract size thus forming cymose panicles. *Flowers yellow; October to December.* Grassland. *Coetzee 531.*

W	S	C	N	E
---	---	---	---	---

cristata Bolus

Suffrutex, up to 300 mm tall. Leaves narrowly elliptic-oblong to lanceolate, subsessile. Inflorescence axillary and terminal, flowers usually solitary on long peduncles, up to 50 mm long. Calyx dark-coloured. Capsule fringed on angles with crowded tentacle-like processes up to 7 mm long. *Flowers red or orange-red; August to January.* Grassland, on rocky slopes, in gorges, along rivers. *Codd & De Winter 3274.*

W	S	C	N	E
---	---	---	---	---

denudata L.f. var. erecta (N.E. Br.) Burt Davy & Greenway

(= *H. erecta* N.E. Br.)

Erect, virgate shrublet, up to 1 m high. Vegetative parts usually rough with minute, fringed scales plus grouped hairs from glandular base. Leaves narrow-lanceolate to oblanceolate, mostly acute and dentate in upper half. Flowers subfascicled at upper part of virgate branches. *Flowers red, yellow, red and yellow; July to June.* Mountains, granite hillsides. *De Winter 9403.*

W	S	C	N	E
---	---	---	---	---

depressa N.E. Br.

(= *Mahernia erodioides* Burch. ex DC. var. *latifolia* Harv.)

Creeping, perennial herb. Leaves ± ovate, less than 4 times as long as broad, usually tinged reddish brown to purplish, margin crenate-serrate. Inflorescence a 2-flowered cyme with long flowering axes and pedicels. Petals often with darker veins. *Flowers salmon-pink to red or yellow; July to June.* Grassland. *Smith 344.*

W	S	C	N	E
---	---	---	---	---

ceenii Baker f.

Perennial herb, with at least outer branches long and trailing. Leaves densely or sparsely coarsely stellate, hairs comparatively long, petiolate, lamina linear-oblong, lanceolate-elliptic to ovate-elliptic or oblong-elliptic, 10–65 × 4–25 mm. Inflorescence a 1-flowered cyme, axillary on long branches and crowded at apices of ultimate branchlets. *Flowers pink, sometimes white or white with dark patch near base; February to July.* Grassland, red sand. *Speedy 8/1.*

W S C N E

erodioides (Burch. ex DC.) Kuntze

Non-glandular, prostrate herb. Leaf lamina crenate. Flowering axes and petioles glabrous or sparsely stellate-hairy. Inflorescence a 2-flowered cyme. *Flowers orange, pink, wine-red; October to April.* Grassland. *Leistner 64.*

W S C N E

floribunda Harv.

Suffrutex, up to 1,2 m high. Flowers small, up to 6 mm long on dried specimens, numerous and short-stalked in each inflorescence. Calyx subinflated, ± 4 mm long on dried specimens. *Flowers yellow; November to June.* Stony hillsides, in shade or open grassland, rocky ledges. *Scheepers 943.*

W S C N E

geniculata Eckl. & Zeyh.

(= *Mahernia chrysanthu* Turcz.)

Suffrutex. Leaves ovate to ovate-oblong, softly greyish tomentose beneath, veins obvious, rugose and glabrescent above, petioles long, up to 30 mm long. Inflorescence a 2-flowered cyme. Petals longer than calyx. *Flowers yellow or white; January to April.* Grassland. *Turner 1685.*

W S C N E

glanduligera K. Schum.

Shrublet, up to 0,6 m high. Branchlets with many patent, gland-tipped hairs intermixed with long, pointed, patent hairs. Inflorescence a 1-flowered cyme in axils of leaves. Capsule glandular-pubescent between sutures, glabrescent. *Flowers pale pink to pale violet; October to June.* Bushveld, along rivers and streams, weeds in lands. *Van der Schijff 1035.*

W S C N E

grandifolia N.E. Br.

Prostrate herb. Stipules lobed or palmatifid. Leaves distinctly petiolate, petioles 10–25 mm long, rugose above, hispid and prominently nerved beneath. Inflorescences: 2-flowered cymes concentrated at ends of branches with leaves diminishing in size, thus forming pseudopanicles. Petals stellate-pubescent. *Flowers yellow; March to August.* Grassland. *Bayliss 7352.*

W S C N E

grandistipula (Buchinger ex Hochst.) K. Schum.

(= *Mahernia grandistipula* Buchinger ex Hochst.)

Perennial herb, up to 300 mm tall, with fairly dense to sparse stellate hairs. Leaves narrowly obovate to oblong. Stipules often deeply cut, looking like leaves arranged in a whorl. Inflorescences: 2-flowered cymes borne towards ends of branches with supporting leaves diminishing in size near apex of branches. Calyx almost globose with short lobes. *Flowers yellow; October to March.* Open, often disturbed grassland. *Scheepers 1466.*

W S C N E

grisea Schinz

(= *H. sideritifolia* Engl.)

Suffrutex, up to 0,6 m high. Leaves finely stellate-tomentose on both surfaces, up to 45 mm long, reduced to bracts in upper half giving the appearance of a raceme to the axillary 1-flowered inflorescences. *Flowers pink; November to May.* Sandy ridges and flats, brackish soil. *Codd 8469.*

W S C N E

lancifolia Szyszyl.

(= *Mahernia tomentosa* Harv. p.p. non Turcz.)

Perennial herb, up to 150 mm tall. Leaves narrowly oblong to obovate, up to 90 mm long, lower leaf surface greyish with much denser stellate hairs than darker upper surface with sparser stellate hairs. Inflorescence a 2-flowered cyme. *Flowers yellow to orange-yellow; September to March.* Mixed grassland, rocky or open, disturbed sites on poor soil. *Reid 1165.*

W S C N E

linearifolia Harv.

Suffrutex, up to 0,6 m high. Leaves very narrowly obovate, plicate—giving the appearance of being linear, up to 12 mm long, narrower than 2 mm, clustered. Inflorescence of 1-flowered cymes in pseudoracemes at ends of slender, ultimate branchlets. *Flowers wine-red, red or yellow; November.* Grassland. *Burt Davy sub PRE 11273.*

W S C N E

linnaeoides (Burch.) K. Schum.

(= *Mahernia linnaeoides* Burch.)

Prostrate herb. Leaves broadly ovate to suborbicular, green with red margins, margins 5–7-crenate-lobulate. Inflorescence a 1-flowered cyme. Petals 7–10 mm long. *Flowers solitary; pink to orange-red; February to March.* Grassland, vleilimestone. *Van Wyk 865.*

W S C N E

modesta (Ehrenb.) Mast.

(= *H. filipes* Harv.,
= *H. holubii* Burt Davy)

Bi- or triennial suffrutex, up to 1 m high. Gland-tipped hairs sometimes obvious. Inflorescence with flowers axillary or in short, not very distinct pseudoracemes. Inflorescences: 1-flowered cymes, solitary, in axils of leaves. Petals usually shorter than 10 mm. Capsule apiculate or shortly horned at apex of sutures. *Flowers pink to red, orange or purple; October to June.* Dry,

warm, sandy regions, mostly in open, sparse vegetation, often along roads, dry riverbeds, old lands. *Codd & Dyer* 3883.

W S C N E

montana N.E. Br.

(= *H. rogersii* Burt Davy)

Suffrutex, up to 300 mm tall, densely and finely tomentulose. Leaves broadly lanceolate to oblanceolate or elliptic, up to 50 × 20 mm, margin dentate above, entire below, petiole 4–6 mm long. *Flowers borne in axillary clusters; yellow-orange; February to June.* Grassland, hillsides. *Galpin* 831.

W S C N E

oblongifolia (Harv.) Hochr.

(= *H. natalensis* Szyszyl.,
= *Mahernia oblongifolia* Harv.)

Procumbent herb. Leaf blade linear to lanceolate-oblong, prominently reticulate beneath, 45 × 8–10 mm, serrulate above, entire below, cuneate at base, scarcely scaberrulous with greyish, finely stellate hairs, ± bulbate above. Inflorescence a 2- or 3-flowered cyme. *Flowers dark pink; September to October.* Grassland. *Schlechter* 2442.

W S C N E

parvula Burt Davy

Perennial herb, up to 300 mm tall. Leaves narrowly linear to oblong linear, 10–23 × 2–4 mm. Inflorescence a 2-flowered cyme. Peduncles, pedicels and calyx sparsely glandular and stellate-pubescent. Petals 4–6 mm long. *Flowers yellow to pinkish red; August to April.* Grassland, bushveld, stony or rocky slopes. *Theron* 1050.

W S C N E

quartiniana A. Rich.

Prostrate perennial herb. Stems and leaves with crisped multicellular hairs. Young growth also with stellate hairs. Leaves ovate-elliptic to narrowly elliptic, margin serrate. Inflorescence a 2-flowered cyme. *Flowers yellow; October to May.* Thornveld, red sand. *Acocks* 12465.

W S C N E

resedifolia (Burch.) R.A. Dyer

Semiprostrate perennial herb. Leaves pinnate, with minute stalked glands and sparse stellate hairs. Inflorescence a 2-flowered cyme. *Flowers red; November to February.* Grassland. *Burt Davy sub PRE* 13841.

W S C N E

stellulata (Harv.) K. Schum.

Prostrate herb. Leaves narrowly ovate to ovate, 2–3 times as long as broad, margin finely serrate. Calyx with stellate hairs, sometimes mixed with simple, gland-tipped hairs. *Flowers red, pink, mauve, purplish to blue; February to May.* Open grassland, disturbed places, edges of vleis. *Codd* 8427.

W S C N E

tomentosa (Turcz.) Schinz ex Engl.

(= *H. brachypetala* Harv.)

Perennial herb, with at least outer branches long and trailing. Leaves finely and densely stellate-tomentose, lamina oblong to narrowly oblong-elliptic, 8–50 × 5–15 mm. Inflorescence a 1-flowered cyme. *Flowers pink, mauve, off-white with pink base; October to March.* Grassland, mountainsides and hillsides. *Herman* 183.

W S C N E

transvaalensis Schinz

Tawny prostrate herb with long, yellowish stellate hairs. Leaves subsessile, ovate to ovate-oblong, 40–50 × 20–35 mm, obtuse, cordate, sparsely clothed and hispid with stiff stellate hairs. Inflorescences: 2-flowered cymes, sometimes concentrated towards ends of branches to form pseudopanicles. *Flowers yellow; September to March.* Grassland. *Burt Davy sub PRE* 7651.

W S C N E

umbratica I. Verd.

Procumbent herb. Leaves ovate-oblong to suborbicular, base cordate, margins irregularly crenate. Branches, petioles, peduncles and pedicels stellate-pubescent with long, stalked glands. Inflorescence a 2-flowered cyme with small flowers. *Flowers yellow; November to April.* Bushveld, in shade on rocky slopes. *Smith* 6153.

W S C N E

Melhanhia Forssk. (s. Afr.: 13 spp.) 5047000

Wild. 1961. F.Z. 1: 528–535.

Verdoorn. 1981. *Bothalia* 13: 263–273.

acuminata Mast. var. **acuminata**

Shrublet, up to 0.65 m high. Leaves usually broadly ovate-oblong, tomentum predominantly grey, interspersed with light brown clustered hairs. Epicalyx abruptly acuminate. *Flowers yellow; November to May.* Bushveld, grassy wooded slopes, sandy soil. *Retief* 318.

W S C N E

acuminata Mast. var. **agnosta** (K. Schum.) Wild

(= *M. agnosta* K. Schum.)

Shrublet, up to 2 m high. Leaves usually narrowly ovate-oblong, tomentum grey but copiously interspersed with rather long dark brown clustered hairs. Epicalyx abruptly acuminate. *Flowers yellow; December to January.* Grassy wooded slopes. *Venter* 2857.

W S C N E

burchellii DC.

(= *M. albicans* Baker f.)

Herb, up to 0.9 m high, much-branched. Epicalyx bracts lanceolate. Mature flower stalk as long as or longer than petiole, 10–40 mm long, 1–3-flowered. *Flowers yellow; September to February.* Bushveld. *Rogers* 4798.

W S C N E

didyma Eckl. & Zeyh.

Shrublet, up to 0,6 m high. Leaves shallowly dentate, lateral veins excurrent in teeth, lamina broad, mostly over 25 mm long and up to 40 mm broad, upper leaf surface pilose. *Flowers yellow; December.* Grassy slopes, thornveld, forest margins. *Buitendag 366.*

W	S	C	N	E
---	---	---	---	---

forbesii Planch. ex Mast.

Shrublet, up to 0,6 m high, ferrugineous pubescent in part. Leaf margin crenate-serrulate. Flowers bisexual. Epicalyx broad, shortly and broadly acuminate, grey-tomentose. Style up to 3,5 mm. *Flowers yellow; November to March.* Along rivers, on dolomitic hillsides, sandy flats. *Germishuizen 267.*

W	S	C	N	E
---	---	---	---	---

integra I. Verd.

Shrublet, up to 450 mm tall. Leaves velvety tomentose on upper surface, margins entire, lamina mostly narrower than 25 mm. Style 6–8 mm long. *Flowers canary-yellow; October to April.* Rocky hillsides among grass in shallow soil on dolomite. *Codd & Verdoorn 10433.*

W	S	C	N	E
---	---	---	---	---

prostrata DC.

(= *M. didyma* Eckl. & Zeyh. var. *linearifolia* (Sond.) Szyszyl., = *M. linearifolia* Sond.)

Shrublet, usually branching near base. Leaves with entire margins, upper surface pilose, early glabrescent, veins impressed above, lamina mostly narrower than 25 mm. *Flowers yellow; October to May.* Grassland, bushveld, rocky slopes, sandy flats. *Theron 711.*

W	S	C	N	E
---	---	---	---	---

randii Baker f.

Shrublet, up to 0,6 m high. Leaves early glabrescent on upper surface. Hairs, when present on upper surface, minutely stellate, net veins on glabrous leaves (Middelburg form) prominent above. Style 2,0–3,5 mm long. *Flowers yellow; January to February.* Grassveld. *Verdoorn 2501, Scheepers 1247.*

W	S	C	N	E
---	---	---	---	---

rehmannii Szyszyl.

(= *M. griquensis* Bolus p.p., = *M. rupestris* Schinz)

Shrublet, up to 300 mm tall. Leaves with upper surface stellate-tomentose to glabrescent, usually less than twice as long as broad. *Flowers shorter than 10 mm; orange-yellow; July to June.* Bushveld, sandy flats, rocky ridges. *Codd & Verdoorn 10378.*

W	S	C	N	E
---	---	---	---	---

transvaalensis Szyszyl.

Shrublet, up to 0,6 m high. Leaves with upper surface distinctly and coarsely stellate-pubescent throughout, usually more than twice as long as broad. Style up to 5 mm long. *Flowers yellow; November to March.* Stony hills, grassy slopes on dolomite formation. *Codd & Verdoorn 10375.*

W	S	C	N	E
---	---	---	---	---

virescens (K. Schum.) K. Schum.

(= *M. bolusii* Burt Davy,
= *M. griquensis* Bolus p.p.)

Shrublet, up to 300 mm tall. Flower stalk short, $\pm$ 4 mm long, shorter than petiole, usually 1-flowered. Epicalyx bracts linear-subulate. *Flowers bright yellow; November to April.* Limy soil. *Codd & Verdoorn 10374.*

W	S	C	N	E
---	---	---	---	---

Sterculia L. (s. Afr.: 5 spp.)

5083000

Wild. 1961. F.Z. 1: 551–557.

Dyer. 1958. Flower. Pl. Afr. 32: t. 1279.

Fourie & Retief. 1989. Flower. Pl. Afr. 50: t. 1999.

murex Hemsl.

Deciduous tree, up to 10 m high. Leaves digitately 5–9-foliolate on petiole 100–230 mm long, leaflets oblong-ovate to oblong-lanceolate narrowed to both ends. Fruit of 1–5 free follicles, outer surface covered with spines of different lengths. *Flowers yellow, marked with brown or crimson; July to September.* Rocky situations. *Story 3913.*

W	S	C	N	E
---	---	---	---	---

rogersii N.E. Br.

Small tree, up to 6 m high. Leaves simple, lamina broadly ovate, shallowly and sinuately 3–5-lobed, base cordate. Fruit of 5 free follicles, outer surface densely stellate hairy. *Flowers greenish yellow flushed with pink, marked with pink or red; August to November.* Bushveld, rocky outcrops, sandy flats. *Zwanziger 271.*

W	S	C	N	E
---	---	---	---	---

Waltheria L. (s. Afr.: 1 sp.)

5059000

Wild. 1961. F.Z. 1: 536–537.

Verdoorn. 1981. Bothalia 13: 275–276.

indica L.

(= *W. americana* L.,
= *W. americana* L. var. *indica* (L.) K. Schum.)

Shrublet, up to 1 m high. Flowers congested in axillary glomerules. Petals 4,00 $\times$ 1,25 mm. Calyces hirsute. *Flowers yellow; November to June.* Grassland, woodland, rocky slopes, waste places. *Clarke 1150.*

W	S	C	N	E
---	---	---	---	---

THYMELAEACEAE

Woody shrublets, shrubs or small trees, often with fibrous bark. Leaves alternate or opposite, without stipules. Flowers regular, long and tubular, often in dense heads. Sepals 4 or 5, petal-like. Petals small and scale-like, arising from mouth between calyx lobes, sometimes absent. Stamens 8–10, arising from tube and opposite calyx lobes; anthers not longer than filaments. Ovary superior, 1(2)-locular. Fruit 1-seeded, dry, remaining closed.

Key after Dyer, Gen. 1: 392–393 (1975).

- 1a Ovary 2-locular, with single ovule in each locule; glabrous shrub with pedicellate flowers in small, terminal umbels **Peddiea**
- 1b Ovary 1-locular, with single ovule; flowers sessile or subsessile 2
- 2a Petals present in the form of fleshy or membranous outgrowths from mouth of calyx tube **Gnidia**
- 2b Petals absent 3
- 3a Calyx tube with scales below stamen attachment; fruit baccate **Passerina**
- 3b Calyx tube without scales below stamen attachment 4
- 4a Flowers 5-merous, in pedunculate, bracteate heads; shrub or small tree, with expanded, glossy leaves **Dais**
- 4b Flowers 4(5)-merous; disc absent; mostly shrublets, often ericoid 5
- 5a Stamens included; leaves not involute, glabrous or hairy **Gnidia**
- 5b Stamens exerted; leaves involute and woolly lined **Passerina**

Dais L. (s. Afr.: 1 sp.) 5465000
Peterson. 1978. F.T.E.A. Thymelaeaceae: 16–18.

cotinifolia L.
Shrub or tree, up to 8(–15) m high. Leaves often at ends of branches, opposite or alternate, petiolate. Inflorescence a dense, pedunculate, terminal head, involucre bracts rigid, persistent. *Flowers pale lilac, pink or white; October to January.* Margins of upland forests and associated bushland, riverbanks. *Retief & Herman 26.*
W S C N E

Gnidia L. (s. Afr.: 99 spp.) 5435000
Meisner. 1857. DC., Prodr. 14: 558–598.
Gilg. 1894. Natürl. PflFam. 3,6a: 226–228.
Gilg. 1895. Bot. Jb. 19: 263–268.
Wright. 1915. F.C. 5,2: 45–68.
Burt Davy. 1926. Fl. Transv. 1: 45, 205–208.
Moss. 1938. Flower. Pl. S. Afr. 18: t. 718.
Dyer. 1944. Flower. Pl. S. Afr. 24: t. 937.
Phillips. 1944. Jl S. Afr. Bot. 10: 63.
Peterson. 1958. Bot. Notiser 111: 625–628.
Henderson. 1961. Flower. Pl. Afr. 34: t. 1332.
Peterson. 1966. Bot. Notiser 119,2: 345–348.
Robyns. 1975. Fl. d'Afr. Centrl., Spermatophytes, Thymelaeaceae: 50–53.
Peterson. 1978. F.T.E.A. Thymelaeaceae: 18–32.
Peterson. 1982. Bothalia 14: 81–82.

albosericea Moss ex B. Peterson
(= *Lasiosiphon ornatus* Burt Davy)
Small shrub, 150–200 mm tall. Leaves silvery silky. Flowers terminal in sessile heads. Calyx tube up to 25 mm long. Petals 1 mm long, oblong, rounded or emarginate. *Flowers yellow; July to February.* Grassland. *Galpin 9627.*
W S C N E

anthylloides (L.f.) Gilg
(= *Lasiosiphon anthylloides* (L.f.) Meisn.)
Shrub, 0,6 m high. Leaves adpressed-silky on both surfaces, lanceolate or oblong. Flowers in dense terminal sessile heads. Calyx tube 20 mm long. Petals minute

or obsolete. *Flowers yellow; August to November.* Grassland. *Mohle 83.*
W S C N E

burchellii (Meisn.) Gilg
(= *Lasiosiphon burchellii* Meisn.)
Shrub, up to 0,9 m high. Leaves densely adpressed-pubescent on both surfaces, less dense with age, sometimes glabrous. Calyx tube 26 mm long. *Flowers yellow, pentamerous, in terminal sessile heads; petals minute, clavate; June to October.* Grassland. *Galpin 13501.*
W S C N E

caffra (Meisn.) Gilg
(= *Lasiosiphon caffra* Meisn.)
Small undershrub, 300–400 mm tall. Leaves glabrous or pubescent, linear to elliptic, acute. Flowers in terminal sessile heads. Calyx tube up to 30 mm long. *Flowers yellow; June to March.* Grassland. *Codd 3045.*
W S C N E

canoargentea (C.H. Wright) Gilg
(= *Lasiosiphon canoargenteus* C.H. Wright, = *L. mossii* Burt Davy)
Shrub, up to 300 mm tall. Leaves oblong-lanceolate, densely clothed (especially on lower surface) with adpressed silvery hairs. Calyx tube 10 mm long. *Flowers yellow to orange; June to November.* Grassland. *Moss 19217.*
W S C N E

capitata L.f.
(= *Lasiosiphon capitatus* (L.f.) Burt Davy, = *L. linifolius* Decne.)
Perennial herb, 250–450 mm tall. Leaves oblong to linear, acuminate, sessile, pilose. Flowers pentamerous, in terminal, long-pedunculate heads, peduncle 50–80 mm long. Petals 5, small, scale-like. *Flowers yellow; July to June.* Grassland. *Fries, Norlindh & Weimarck 1863.*
W S C N E

fastigiata Rendle

Subshrub, 400 mm tall. Leaves linear-lanceolate, hairy. Calyx hairy. Inflorescence terminal or axillary clusters of 2–4 flowers, sessile or shortly stalked. Flowering region overtopped by new growth. Petals 8, fleshy. Perfect anthers 8. *Flowers cream, pale blue, whitish, yellow; October and January.* Mountain grassland, rocky hillsides. *Hilliard & Burt 6013.*

W S C N E

gymnostachya (C.A. Mey.) Gilg

(= *Arthrosolen gymnostachys* C.A. Mey.)

Undershrub, 300–400 mm tall. Leaves alternate, linear-lanceolate or oblong, acute, hairy. Flowers in terminal spikes. Bracts absent. Petals absent. *Flowers reddish brown; October to March.* Grassland. *Devenish 1278.*

W S C N E

kraussiana Meisn. var. **kraussiana**

(= *Lasiosiphon kraussii* Meisn.,

= *Gnidia hoepfneriana* Gilg)

Perennial herb, 0.20–0.75 m high. Leaves lanceolate to ovate. Flowers pentamerous, in terminal distinctly stalked heads. Calyx tube 7–12(–15) mm long. Petals membranous, lanceolate, acute. *Flowers yellow or orange; June to February.* Open grassland. *Fries, Norlindh & Weimarck 1903.*

W S C N E

microcephala Meisn.

(= *Arthrosolen microcephalus* (Meisn.) E. Phillips)

Perennial herb, 300 mm tall. Leaves linear, lanceolate to narrowly obovate, acuminate or acute. Involucral leaves much broader than cauline. Heads terminal. Petals 4, fleshy, clavate. Perfect anthers 8. *Flowers yellow to orange-red; August to March.* Grassland. *Leendertz 3761.*

W S C N E

nodiflora Meisn.

Undershrub, up to 300 mm tall. Leaves linear-oblong, acute, densely hairy. Flowers in sessile terminal or axillary clusters. Calyx hairy. Petals 8, fleshy. Perfect anthers 8. *Flowers white or pale yellow; September to February.* Grassland. *Codd 5178.*

W S C N E

polyantha Gilg

(= *Lasiosiphon polyanthus* Gilg)

Undershrub, 400–500 mm tall. Flowers in terminal sessile heads. Calyx tube 15–30 mm long, spreading-pilose, lobes up to 8 mm long. Petals minute, oblong. *Flowers yellow; September.* Grassland. *Fourie 2822.*

W S C N E

polycephala (C.A. Mey.) Gilg

(= *Arthrosolen polycephalus* C.A. Mey.)

Shrub, up to 0.9 m high. Leaves linear-lanceolate, acute. Flowers pentamerous, in terminal heads. Involucral bracts conspicuous, coloured. Petals absent. *Flow-*

ers rich yellow; July to October. Grassland. *Barrett-Hamilton 6410.*

W S C N E

robusta B. Peterson

(= *Lasiosiphon nanus* Burt Davy)

Shrub, 80–120 mm tall. Leaves, involucral bracts and stems glabrous. Flowers in sessile heads. Calyx tube 20–30 mm long. Petals 4, 5–6, 0 mm long. *Flowers yellow; October to February.* Grassland. *Devenish 942.*

W S C N E

rubescens B. Peterson

Shrub or subshrub, 200–300 mm tall. Stems and peduncles glabrous. Flowers in terminal heads. Calyx lobes 1–2 mm long and 1–2 mm broad. *Flowers yellow but very soon turning red-orange; September to June.* Dry, woody slopes, usually on gravelly soil. *Codd 6110.*

W S C N E

sericocephala (Meisn.) Gilg ex Engl.

(= *Arthrosolen sericocephalus* Meisn.)

Shrub, up to 300 mm tall. Stems and peduncles pilose. Leaves linear, glabrous. Flowers pentamerous, in terminal pedunculate heads. Petals absent. *Flowers yellow; October to May.* Grassland. *Smith 804.*

W S C N E

splendens Meisn.

(= *Lasiosiphon splendens* Endl.)

Shrub, 0.6 m high. Leaves lanceolate or oblanceolate, acute, densely clothed with adpressed silvery silky hairs. Calyx tube 10 mm long. *Flowers yellow; January to September.* Grassland on mountain summit. *Venter 6216.*

W S C N E

variabilis (C.H. Wright) E. Phillips

(= *Arthrosolen variabilis* C.H. Wright)

Subshrub. Leaves alternate, rarely subopposite, sessile, oblong or oblong-lanceolate, acute at both ends, silky beneath, glabrous or glabrescent above. Flowers in gradually elongating terminal spike. Bracts shorter than calyx. Calyx fleshy, lobes 4. Petals absent. Stamens 8. *Flowers (calyx) pink or yellowish.* *Wilms 1288.*

W S C N E

Passerina L. (s. Afr.: 16 spp.)

5461000

Thoday. 1924. Kew Bull. 1924: 146–168.

filiformis L.

Shrub, 1–2 m high. Leaves narrow, linear or slightly tapering. Inflorescence spicate, subterminal, overtopped by new vegetative growth. Bracts with membranous glabrous wings. Outer sepals bearded behind

apex. *Flowers pale yellow; October.* Streambanks. *Buitendag 712.*

W S C N E

montana Thoday

Shrub, up to 1,5 m high. Inflorescence terminal, subcapitulate, with ± 4 flowers. Bracts often keeled and subacute, usually thin and coloured, longitudinally veined, glabrous on back. *Flowers creamy yellow to pink, red or brown; September to December.* Streambanks, forest edges. *Codd & Dyer 4473.*

W S C N E

Peddiea Harv. (s. Afr.: 1 sp.)

5434000

Wright. 1915. F.C. 5,2: 80.

Glen. 1986. Flower. Pl. Afr. 49: t. 1930.

africana Harv.

Small tree or shrub, 1–10 m high. Leaves alternate, sometimes clustered at ends of branches. Flowers pedicellate, in terminal umbels. Calyx forming a tube. Petals absent. *Flowers emerald-green to yellow; April to November.* Forest understorey and nearby grassland. *Kluge 756.*

W S C N E

TILIACEAE

Small trees, lianes, shrubs or herbs, often with star-shaped hairs and fibrous bark. Leaves alternate, in 2 ranks, usually asymmetrical, with stipules. Flowers regular. Petals 5, free, often with glandular appendage at base. Stamens numerous, free, often borne on short column. Ovary superior. Fruit a drupe or capsule.

Key after Wild in F.S.A. 21,1: 1 (1984).

- 1a Fruit indehiscent, without bristles, drupaceous, 1–4-lobed **Grewia**
- 1b Fruit usually dehiscent, if indehiscent then densely bristly, a glabrous, hairy or bristly capsule or schizocarp 2
- 2a Flowers white, pinkish or mauve, 4-merous; some stamens sterile with no anthers or, if sterile stamens very few or apparently absent, filaments nodose **Sparrmannia**
- 2b Flowers yellow, 5-merous, sometimes 4-merous but then capsule pod-like; all stamens fertile, filaments never nodose. 3
- 3a Fruits globose, bristly, spiny or with conical, spine-tipped tubercles; ovules 2 per locule **Triumfetta**
- 3b Fruits usually long and pod-like, rarely ellipsoid or ovoid; ovules more than 2 per locule or, if only 2, then capsule smooth; leaves often tailed at base **Corchorus**

Corchorus L. (s. Afr.: 15 spp.)

4953000

Wild. 1984. F.S.A. 21,1: 32–42.

asplenifolius Burch.

(= *C. serrifolius* Burch.)

Prostrate or suberect perennial herb. Leaves linear to narrowly oblong-lanceolate, margin coarsely crenate-dentate. Capsule 3- or 4-valved, fruiting pedicel curved. *Flowers yellow; September to May.* Open woodland or bushveld and margins of vleis. *Germishuizen 3418.*

W S C N E

confusus Wild

Prostrate or spreading perennial herb. Capsule 3- or 4-valved, fruiting pedicel straight. Fruit valves hispidulous. *Flowers yellow; June to March.* Koppies or lowveld bush on sandy or basaltic soils. *Devenish 121.*

W S C N E

junodii (Schinz) N.E. Br.

(= *C. discolor* N.E. Br.)

Small shrub, 1,6 m high. Capsule broadly ovoid and glabrous or ellipsoid with stiff plumose bristles ± 5 mm long. *Flowers yellow; January to April.* Rocky outcrops or sandy flats. *Codd 5944.*

W S C N E

kirkii N.E. Br.

(= *C. pongolensis* Burt Davy & Greenway)

Small shrub, 2,5 m high. Bracts up to 8 mm long. Nerves on leaves conspicuously raised below. Capsule narrowly ovoid to linear-cylindrical, densely clothed with soft, stellately hairy bristles. *Flowers yellow; July to June.* Open woodland, often on rocky hillsides. *Meeuse 10240.*

W S C N E

longipedunculatus Mast.

Annual herb, 0,6 m high. Leaves linear. Peduncles filiform, up to 20 mm long. *Flowers yellow; December to March.* Sandy grassland. *Codd 5248.*

W S C N E

olitorius L.

Coarse, annual herb, 2 m high. Capsule 10-ribbed, 5-valved. *Flowers yellow; January to February.* Open brackish flats. *Codd 4130.*

W S C N E

pinnatipartitus Wild

Erect or trailing perennial herb. Leaves glabrous or minutely and sparsely puberulent on midrib below, pinnatipartite, lobed four-fifths of the way to midrib. Capsule 3- or 4-valved, blunt and undivided at apex.

Flowers: petals yellowish or tinged pinkish purple, sepals purplish or pinkish; November and April. Limestone soils. Germishuizen 3983.

W S C N E

psammophilus Codd

Prostrate perennial herb. Leaves ovate-oblong to broadly elliptic, strigose, margin finely crenulate. Fruiting pedicel curved. *Flowers yellow; February. Open Terminalia sericea* veld on sandy flats. *Smook 4320a.*

W S C N E

schimperi Cufod.

Erect to prostrate annual herb. Peduncles obsolete. Capsules up to 25 mm long, usually curved, not held erect, angles muricate or sharply toothed. *Flowers yellow; February. Vlei margins. Herman 734.*

W S C N E

sulcatus I. Verd.

Prostrate perennial herb. Leaves densely sericeo-vilous on lower surface, ovate to narrowly ovate-oblong, margin coarsely crenate-dentate. Fruiting pedicel curved. *Flowers yellow; November to February and in June. Limestone formations in dry bushveld. Acocks 1445.*

W S C N E

tridens L.*

Erect or spreading annual herb, 0.6 m high. Capsule with 3 spreading horns at apex. *Flowers yellow; October and January to May. Disturbed sandy areas. Native to Europe and Asia. Codd 5400.*

W S C N E

trilocularis L.*

Erect or sometimes decumbent annual herb, 1 m high. Capsules up to 70 mm long, held erect, valves minutely scabrous. Peduncles up to 2 mm long. *Flowers yellow; November to April. Savanna. Native to Europe and Asia. Snell 32.*

W S C N E

velutinus Wild

Small shrub, 1 m high. All parts with short, dense, velvety, greyish yellow indumentum. Nerves inconspicuous. *Flowers yellow; January to March. Dry deciduous woodland on sandy soils in the Limpopo valley. Van der Schijff 1831.*

W S C N E

Grewia L. (s. Afr.: 26 spp.)

4966000

Wild. 1984. F.S.A. 21, 1: 1-19.

avellana Hiern

(= *G. calycina* N.E. Br.)

Shrub, 1 m high. Bracts trifid. Petal lamina $\pm$ 2 mm long and shortly triangular. *Flowers white; November to*

February. Dry woodland on Kalahari sand. Meeuse 10788.

W S C N E

bicolor Juss.

(= *G. disticha* Dinter & Burret,
= *G. miniata* Mast. ex Hiern)

Shrub, 9 m high. Leaves asymmetrical at base, elliptic, elliptic-oblong or lanceolate, discolorous, margin entire or finely serrulate. *Flowers yellow; October to May. Deciduous woodland and mixed woodland. Hardy & De Villiers 5160.*

W S C N E

caffra Meisn.

Scandent shrub, up to 2 m high. Leaves glabrous or very sparsely stellate-pubescent on both sides. Androgynophore produced well beyond basal glabrous portion in a densely pubescent extension. *Flowers yellow; November to March. Along banks of rivers at low altitudes. Acocks 16791.*

W S C N E

flava DC.

(= *G. cana* Sond.,
= *G. hermannioides* Harv.)

Compact shrub, 2 m high. Leaves symmetrical at base, nerves raised and reticulate below. *Flowers yellow; August to May. Dry deciduous woodland and bushveld. Phillips 3019.*

W S C N E

flavescens Juss. var. flavescens

(= *G. aspera* Schinz,
= *G. rautanenii* Schinz)

Shrub, 2-5 m high. Leaves coarsely and harshly pubescent. Flowering peduncles shorter than 10 mm. Fruit sometimes entire but usually shallowly 2- or occasionally 4-lobed. *Flowers yellow; October to July. Open woodland below 1500 m; on termite mounds above that altitude. Van der Schijff 191.*

W S C N E

flavescens Juss. var. olukondae (Schinz) Wild

(= *G. olukondae* Schinz)

Shrub, 2-5 m high. Flowering peduncles longer than 10 mm. Leaves broadly oblong or almost orbicular. *Flowers yellow; December to April. Woodland, bushveld and thickets below 1500 m. Botha 3391.*

W S C N E

gracillima Wild

Shrub, 2 m high. Leaves glabrous above, sparsely stellate-pubescent below, apex acute or acuminate, blade lanceolate, nerves not reticulate. Fruit not lobed. *Flowers yellow; January to February. Woodland, protected situations like streambanks and rocky hills with dense vegetation. Codd 6894.*

W S C N E

hexamita Burret

(= *G. messinica* Burt Davy & Greenway,
= *G. schweickerdtii* Burret)

Shrub, 2–5 m high. Leaves discolorous, nerve interspaces tomentose, nerves with tufts of longer brownish hairs. *Flowers yellow; September to December and in June*. Deciduous bushveld. *Codd & Dyer 4599*.

W S C N E

hispidia Harv.

Shrub, up to 1 m high. Leaves not discolorous, 35 × 23 mm. Fruit deeply 4-lobed. *Flowers pink or lilac; November*. Thornveld and mixed scrubland. *Schlechter 3763*.

W S C N E

inaequilatera Garcke

Small tree or shrub, 7 m high. Leaves discolorous, nerve interspaces finely tomentellous, nerves lacking tufts of longer brownish hairs. Fruit 2-lobed. *Flowers yellow; January*. River valleys. *Acocks 16792*.

W S C N E

microthyrsa K. Schum. ex Burret

Shrub, 2–3 m high. Inflorescences in terminal panicles. Fruit never lobed, pendulous on recurved pedicels. *Flowers white, cream, yellow or sometimes pinkish; November to January and in April*. Dry bushveld or dry mixed woodland. *Codd 5334*.

W S C N E

monticola Sond.

(= *G. cordata* N.E. Br.,
= *G. discolor* Harv.)

Small tree or shrub, 5 m high. Leaves discolorous, margin irregularly and coarsely serrate, base asymmetrically cordate. Fruit deeply (1)2-lobed, 8 mm in diameter. *Flowers yellow; October to March*. Open woodland and bushveld. *Van der Schijff 3208*.

W S C N E

occidentalis L.

Small tree or shrub, 3 m high. Leaves thin-textured, not discolorous, not glossy above, margin finely crenate-dentate. Fruit 4-lobed, brownish to purplish black. *Flowers purple, mauve, pinkish or rarely white; September to March*. Forest edges and in forest clearings. *Onderstall 26*.

W S C N E

retinervis Burret

(= *G. deserticola* Ulbr.)

Shrub, 1–2 m high. Leaves sparsely pubescent or glabrous, nerves reticulate on both sides. Fruit globose, not lobed. *Flowers yellow; November to April*. Open woodland and bushveld; sandy soils. *Acocks 8883*.

W S C N E

rogersii Burt Davy & Greenway

Shrub, 5 m high. Leaves discolorous. Fruit 4-lobed. *Flowers yellow; October to January*. Rocky hillsides. *Codd 987*.

W S C N E

subspathulata N.E. Br.

Shrub, 2–4 m high. Leaves discolorous, asymmetrical at base, margin regularly serrate. *Flowers yellow; October to April*. Open woodland or savanna. *Codd 6760*.

W S C N E

sulcata Mast.

Shrub, 2–3 m high. Leaves not discolorous. Inflorescences concentrated at ends of branches. Fruit 4-lobed. *Flowers white; March to October*. Low altitude river valleys, sandy riverbanks. *Codd & De Winter 5533*.

W S C N E

tenax (Forssk.) Fiori

(= *G. populifolia* Vahl)

Shrub, 2 m high. Leaves orbicular to obovate. Flowers always borne singly, leaf-opposed. Fruit 4-lobed, 10 mm in diameter, shining. *Flowers white; October to July*. Dry woodland or semidesert scrub. *Codd & Dyer 3847*.

W S C N E

vernica Schinz

Small shrub, 0.6 m high. Leaf blades broadly ovate, rotund, broadly obovate or rhombic, not discolorous. Fruit (1)2-lobed. *Flowers greenish yellow or greenish white; October to May*. Mixed bushveld or woodland. *Codd 10394*.

W S C N E

villosa Willd.

Shrub, 1–3 m high. Leaves suborbicular to broadly elliptic, veins reticulate. Inflorescences leaf-opposed and often arising some distance from node. *Flowers yellow; December to May*. *Acacia* bush or woodland or mixed *Commiphora-Terminalia* bushveld. *Meyer 6191*.

W S C N E

Sparrmannia L.f. (s. Afr.: 2 spp.) 4957000

Wild. 1984. F.S.A. 21,1: 29–31.

ricinocarpa (Eckl. & Zeyh.) Kuntze

(= *S. palmata* E. Mey. ex Harv.)

Slender shrub, scrambler, 3 m high. Leaves up to 130 × 100 mm, lobes long-acuminate. Sepals ± 10 mm long. *Flowers white; November to July*. Forest edges or in forest clearings. *Hemm 589*.

W S C N E

Triumfetta L. (s. Afr.: 12 spp.) 4975000

Wild. 1963. F.Z. 2,1: 63–78.

Wild. 1984. F.S.A. 21,1: 20–28.

angolensis *Sprague & Hutch.*

Erect or lax perennial herb, 0,6 m high. Prickles on fruit terminated by crown of 2–5 minute setae. *Flowers yellow; December to March.* Partial shade and often near rivers. *Galpin M42.*

W S C N E

annua *L. forma annua*

Herb, 0,1–0,6 m high. Fruit 10 mm in diameter; prickles on fruit hooked or falcate, glabrous. Leaves membranous with simple hairs. *Flowers yellow; February to April.* Shady situations at forest edges and bushy places. *Strey 3073.*

W S C N E

annua *L. forma piligera* *Sprague & Hutch.*

Herb, 0,1–0,6 m high. Leaves membranous, with simple hairs. Fruit 10 mm in diameter, prickles on fruit hooked or falcate, pilose with long weak hairs. *Flowers yellow; February to March.* Shady situations at forest edges and bushy places. *Mogg 14988.*

W S C N E

dekintiana *Engl.*

Small shrub, up to 1,3 m high. Leaves ovate, ovate-oblong or oblong-lanceolate, margins $\pm$ irregularly serrate, tomentellous on both sides. Terminal setae of prickles spreading, 6–8, prickles stellately plumose. *Flowers yellow.* Woodland. *Van Wyk 3949.*

W S C N E

obtusicornis *Sprague & Hutch.*

Prostrate or trailing perennial herb. Leaf blades broadly elliptic to very broadly ovate, apex obtuse or acute, base rounded or subcordate. Bristles on fruit with single terminal caducous seta. *Flowers yellow; November to January.* Common on sandveld. *Acocks 16614.*

W S C N E

pentandra *A. Rich.*

Annual herb, 2 m high. Fruit ovoid, glabrous, prickles on fruit hooked or falcate, ciliate on one side. *Flowers yellow; February to March.* Open grassland and woodland; also weed of cultivation. *Meeuse & Strey 10435.*

W S C N E

pilosa *Roth var. effusa* (*E. Mey. ex Harv.*) *Wild*

(= *T. effusa* E. Mey. ex Harv.)

Small shrub, 1,3 m high. Fruit 10 mm or more in diameter, prickles on fruit hooked or falcate, glabrous

or rarely with a few sparse hairs near base. *Flowers yellow; January to April.* Open woodland, roadsides and waste places. *Breyer 17818.*

W S C N E

pilosa *Roth var. tomentosa* *Szyszl. ex Sprague & Hutch.*

Small shrub, 1,3 m high. Leaves not membranous, densely stellately hairy or tomentose. Prickles on fruit strongly uncinatate, pilose. *Flowers yellow; January to May.* Open woodland, roadsides and waste places. *Codd 6548.*

W S C N E

rhomboidea *Jacq.*

Annual or perennial herb, 2 m high. Leaves broadly ovate to ovate-lanceolate, often 3-lobed, obtuse to rounded at base. Prickles on fruit uncinatate at apex, hooked or falcate, glabrous. *Flowers yellow; September to June.* Open grassland and woodland; also weed of cultivation. *Junod 33.*

W S C N E

sonderi *Ficalho & Hiern*

(= *T. trichocarpa* Sond.)

Small, erect undershrub, 500 mm tall. Fruit indehiscent with weak, slender plumose bristles, 30–40 mm in diameter. *Flowers yellow; November to April.* Open grassland, woodland or roadsides. *Codd 2545.*

W S C N E

welwitschii *Mast. var. welwitschii*

(= *T. rehmannii* Szyszl.)

Perennial herb, 200–450 mm tall. Indumentum on young leaves stellate-pubescent, and tomentellous on nerve interspaces. Fruit indehiscent with weak, slender plumose bristles, 20–25 mm in diameter. *Flowers yellow; May to February.* Open woodland and grassland. *Meeuse 10270.*

W S C N E

welwitschii *Mast. var. hirsuta* (*Sprague & Hutch.*) *Wild*

(= *T. hirsuta* Sprague & Hutch.)

Perennial herb, 200–450 mm tall. Indumentum on young leaves of scattered simple hairs, sometimes mixed with stellate hairs. Fruit indehiscent, with weak, slender plumose bristles, 20–25 mm in diameter. *Flowers yellow; July to April.* Open woodland and grassland. *Rogers Tvl. Mus. 19712.*

W S C N E

TRIMENIACEAE

Trees or shrubs, dioecious. Leaves opposite or subopposite, shortly petioled, minutely pellucid-dotted. Male flowers: perianth flattish, 4–6-parted; stamens 10–15 or numerous. Female flowers: perianth 3–5-lobed; ovary superior, 1-locular; stigma thick. Fruit fleshy, smooth with persistent stigma.

Xymalos Baill. (s. Afr.: 1 spp.)

2759010

Baker & Wright. 1913. F.T.A. 1: 170.

monospora (Harv.) Baill.(= *Xylosma monospora* Harv.)

Tree, up to 10 m high. Leaves with secondary veins looping along margin, fine network of veins conspicu-

ous, margins often with a few teeth. *Flowers green; July to June.* Forest. *Van der Schijff 5482.*

W S C N E

TURNERACEAE

Herbs, shrubs or trees. Leaves alternate, without stipules, blade often with nectar glands at base. Flowers regular. Petals 5, free, stalked, and twisted in bud. Stamens 5, free. Ovary superior, with 1 locule; styles 3, slender. Fruit a capsule with 3 valves.

Key after Obermeyer in F.S.A. 22: 93 (1976).

- 1a Flowers on long racemes; capsule resembling a silique of the Brassicaceae, long, thin, terete, rostrate; seeds straight, cylindrical **Tricliceras**
 1b Flowers solitary or on short, few-flowered racemes; capsule ovoid; seeds curved 2
 2a Calyx tubular; petals not clawed; capsule erect, narrowly ovoid, beaked, thin-walled; leaves without 1 or 2 pairs of sessile glands below **Streptopetalum**
 2b Calyx of 5 sepals fused in lower third; petals clawed, alternating with sepals; capsule recurved, ovoid, woody; leaves with 1–several pairs of round sessile glands below on lower half of leaf **Piriqueta**

Piriqueta Aubl. (s. Afr.: 1 sp.)

5357000

Obermeyer. 1976. F.S.A. 22: 98–101.

capensis (Harv.) Urb.

Small woody shrub, 150–300 mm tall. Leaves narrowly ovate with 1 or 2 pairs of sessile circular glands on lower surface near margin. *Flowers opening in the morning, fading at night; yellow; October to March.* Usually on stony hillsides in dry bushveld. *Codd & Verdoorn 10361.*

W S C N E

Leaves coarsely serrate. Capsule erect, hairy. *Flowers yellow or orange; November to June.* Behaving as a weed. *Codd & Dyer 3907.*

W S C N E

Streptopetalum Hochst. (s. Afr.: 1 sp.)

5356000

Obermeyer. 1976. F.S.A. 22: 98.

serratum Hochst.

Small annual or perennial herb, up to 400 mm tall. Leaves sessile, narrowly ovate, serrate, thin, yellow-green. Calyx narrowly tubular, ± 10 mm long. *Flowers yellow or orange; January to May.* In warm dry bushveld, usually in sandy soil, often along roadsides. *Bredenkamp 1508.*

W S C N E

laceratum (Obern.) Oberm.(= *Wormskioldia lacerata* Oberm.)

Perennial herb, 300 mm tall. Leaves 20–35 mm broad, yellow-green, lacinate. Stems, leaves, peduncles and capsules echinulate; bristles on stems not reddish. Racemes 4–7-flowered. *Flowers deep orange; September to May.* In open spaces in subtropical woodland or in disturbed places. *Coetzer 151.*

W S C N E

lobatum (Urb.) R. Fern.(= *Wormskioldia lobata* Urb.)

Annual herb, up to 0,6 m high, without bulbous-based setae on stems; hairs simple, short, sparse. Leaves lobate in lower half, rarely entire; stipules auriculate, fused to base of leaf. *Flowers orange or pale yellow; April.* In sandy habitats. *Zambatis 738.*

W S C N E

Tricliceras Thonn. ex DC. (s. Afr.:

7 spp.)

5355000

Fernandes. 1975. Bolm Soc. broteriana 49: 15–25.

Obermeyer. 1976. F.S.A. 22: 93–98.

Obermeyer. 1978. Bothalia 12: 453.

glanduliferum (Klotzsch) R. Fern.(= *Wormskioldia glandulifera* Klotzsch)

Small, glandular-pubescent annual herb, up to 300 mm tall, with bulbous-based setae on stems, exstipulate.

longipedunculatum (Mast.) R. Fern. var. **longipedunculatum**(= *Wormskioldia longipedunculata* Mast.)

Small perennial herb, up to 400 mm tall. Stems with long patent red to dark brown bristles; other parts glabrescent. Leaves 2–20 mm broad, greyish green, subentire to dentate, rarely lacinate. Racemes 6–12-flowered. *Flowers bright orange-red; September to April.* In dry bushveld, road verges and lands. *Galpin 133156.*

W S C N E

schinzii (Urb.) R. Fern. subsp. **schinzii** var. **juttae** (Dinter & Urb.) R. Fern.
(= *Wormskiodia schinzii* Urb.)

Small spreading perennial herb, 300 mm tall, glandular-pubescent, but without long setae. Leaves 12–25 mm broad, coarsely and irregularly double-serrate. Capsule ± 30 mm long, few-seeded, not constricted between seeds. *Flowers bright orange-red; November to December.* Sandy soil. *Vahrmeyer 1297.*

W S C N E

tanacetifolium (Klotzsch) R. Fern.
(= *Wormskiodia tanacetifolia* Klotzsch)

Annual herb, up to 0,6 m high. Stems with bulbous-based setae. Leaves pinnatisect, discolorous, soft and thin. Capsule patent or reflexed, glabrous. *Flowers yellow; December to April.* Behaving as a weed, often in sandy disturbed soil. *Codd 5246.*

W S C N E

ULMACEAE

Trees or shrubs, with or without spines. Leaves alternate, base often with unequal sides, with stipules. Flowers often unisexual, regular. Sepals 4–8, free. Petals absent. Stamens the same number as sepals and opposite them. Ovary with 1 or 2 locules; styles 2, divergent. Fruit dry or with thin fleshy layer.

- 1a Plant with axillary spines; stipules united along 1 margin **Chaetacme**
- 1b Plant unarmed; stipules free **2**
- 2a Ovary stipitate, compressed; fruit a flat samara, wing surrounding fruit **Ulmus**
- 2b Ovary sessile; fruit a thinly fleshy drupe **3**
- 3a Male flowers with induplicate-valvate calyx lobes; leaf blades serrate almost from base; styles 0,5–1,0(–2,0) mm long **Trema**
- 3b Male flowers with imbricate calyx lobes; leaf blades entire, coarsely toothed or serrate but then only in upper two-thirds; styles 2–5 mm long **Celtis**

Celtis L. (s. Afr.: 3 spp.) 1898000
Polhill. 1964. Kew Bull. 19: 140–143.
Polhill. 1966. F.T.E.A.: 1–10.

africana Burm. f.
(= *C. kraussiana* Burm. f.)

Deciduous tree, up to 35 m high. Leaf blades entire, coarsely toothed or serrate in upper two-thirds. Stamens yellow. Drupe yellow. *Flowers maroon; August to September.* Forest and grassland, bushclumps on hillsides. *De Winter 361.*

W S C N E

Chaetacme Planch. (s. Afr.: 1 sp.) 1906000
Polhill. 1966. F.T.E.A.: 12–14.

aristata Planch.

Shrub or small tree, up to 10 m high. Branches drooping, often zigzag. Leaf apex shortly acuminate and long-mucronate. *Flowers cream; July to June.* Bushclumps, forest, kloofs, hillsides. *Codd 6298.*

W S C N E

Trema Lour. (s. Afr.: 1 sp.) 1902000
Polhill. 1966. F.T.E.A.: 10–12.

orientalis (L.) Blume
(= *T. guineensis* (Schumach. & Thonn.) Ficalho)

Shrub or small tree, up to 12 m high. Leaf blade serrate almost from base, oblong-lanceolate to attenuate-ovate, (20–)75–140 × (12–)23–72 mm, rounded to cordate at base, penninerved. Stamens white. *Flowers (perianth) green; September to April.* Banks of rivers and streams, kloofs and moist woodland. *J.B.G. 4451.*

W S C N E

Ulmus L. (s. Afr.: 2 spp.) 1896000
Bailey. 1977. Hortus Third: 1137–1138.

parvifolia Jacq.*

Medium-sized tree. Branchlets thinly pubescent. Leaves small, 25–80 mm long, elliptic to ovate, leathery and glossy green. *Flowering March.* Streambanks. Native to China and Japan. *Germishuizen 1257.*

W S C N E

URTICACEAE

Herbs or shrubs, often with coarse or stinging hairs; sap watery; bark tough and fibrous. Leaves alternate, rarely opposite, with stipules. Flowers very small, regular, greenish, unisexual. Calyx with 4 or 5 lobes. Petals absent. Stamens the same number as and opposite calyx lobes; filaments bent inward in bud. Ovary superior, 1-locular. Fruit a dry nutlet or a drupe.

Key after Immelman (pers. comm.).

- 1a Plant with stinging hairs, at least on inflorescences and petioles; inflorescence a panicle with flowers in minute, cymose clusters along inflorescence axes 2
 1b Plants completely without stinging hairs; inflorescence a sessile axillary cluster 5
 2a Stipules free, lateral 3
 2b Stipules fused, intrapetiolar 4
 3a Herb; leaves opposite **Urtica**
 3b Tree; leaves alternate **Obetia**
 4a Female flower with 3 almost completely united tepals; stinging hairs mostly longer than 5 mm, very dense **Girardinia**
 4b Female flower with 4 free, unequal tepals; stinging hairs mostly shorter than 5 mm, moderately dense to sparse **Laportea**
 5a Leaves opposite, slightly to definitely anisophyllous; stipules completely fused, intrapetiolar; female and male flowers with 3 tepals **Pilea**
 5b Leaves alternate or rarely a few on each plant opposite, or with opposite leaves throughout, but then male flowers with 1 tepal and 1 stamen only, and female flowers naked; stipules free, lateral or lacking 6
 6a Bracts below inflorescence prominent, covering at least three-quarters of inflorescence, and forming a $\pm$ fused, campanulate involucre **Droguetia**
 6b Bracts below inflorescence small and insignificant 7
 7a Shrub; male flower globular, 4(or 5)-merous **Pouzolzia**
 7b Herb; male flower club-shaped, with 1 stamen only **Didymodoxa**

Didymodoxa Wedd. (s. Afr.: 2 spp.) 2014010

Immelman. Pers. comm.

caffra (Thunb.) Friis & Wilmot-Deer

Slender, annual herb, up to 0.5 m high. Apical tooth on leaves usually 2–3 times as long as broad. Stipules lanceolate with apex attenuate. Anthers white. *Flowers green; November to March.* Among rocks or in forest in moist places. *Junod sub TM 23497.*

W S C N E

Droguetia Gaudich. (s. Afr.: 2 spp.) 2013000

Immelman. Pers. comm.

iners (Forssk.) Schweinf. subsp. iners

(= *D. thunbergii* N.E. Br.,
 = *D. woodii* N.E. Br.)

Perennial herb or subshrub, up to 1 m high. Leaves always opposite. Young stems and petioles subglabrous or with an indumentum of stiff sparse hairs or stiff appressed hairs, terminal tooth usually more than twice as long as broad. Stipules lanceolate, not prominent. *Flowering April.* *Sheepers 616.*

W S C N E

Girardinia Gaudich. (s. Afr.: 1 sp.) 1983000

Immelman. Pers. comm.

diversifolia (Link) Friis

(= *G. condensata* (Steud.) Wedd.,
 = *G. heterophylla* Decne.)

Erect herb, up to 1 m high. Stem, leaves and peduncles densely covered with long stinging hairs, up to 4 mm long. Hairs of inflorescences hard and pungent. *Flowering February to May.* Shady places, often in disturbed habitats. *Theron 2105.*

W S C N E

Laportea Gaudich. (s. Afr.: 3 spp.) 1980000

Immelman. Pers. comm.

alatipes Hook. f.(= *Fleurya alatipes* (Hook. f.) N.E. Br.)

Erect, annual or short-lived perennial herb, up to 2 m high. Leaf margin with 28–40 pairs of teeth. Male flowers with 4 tepals. Achene laterally compressed, margin smooth and blackish brown. *Perianth green. Flowering January to April.* Undergrowth of forest, usually near water. *Kerfoot 8375.*

W S C N E

peduncularis (Wedd.) Chew subsp. peduncularis

(= *Fleurya mitis* (Wedd.) N.E. Br.,
 = *L. caffra* Chew)

Annual herb. Stems decumbent or scrambling, up to 1.5 m long. Leaf margin with 5–25 pairs of teeth. Male flowers with 5 tepals. Stinging hairs mounted on small protuberances. *Perianth green.* Anthers white. *Flowering December to March.* Forest. *Lambinon 82/163.*

W S C N E

Obetia Gaudich. (s. Afr.: 2 spp.) 1979000

Immelman. Pers. comm.

tenax (N.E. Br.) Friis(= *Urera tenax* N.E. Br.)

Shrub or small tree, up to 5 m high. Stipules 1.0–2.5 mm broad, entirely glabrous. Leaf lamina not bullate. Stamens white. *Flowers (perianth) green; August to December.* Rocky hillsides and forest margins. *Smith 1052.*

W S C N E

Pilea Lindl. (s. Afr.: 2 spp.)

1984000

Immelman. Pers. comm.

rivularis Wedd.

(= *P. worsdellii* N.E. Br.)

Perennial herb, up to 0.6 m high. Leaves opposite. Flowers in axils of leaves. Pedicels long. Anthers white. *Flowers green; January to March*. In forests, along forest margins and streambanks, in damp places. *Mohle 266*.

W S C N E

Pouzolzia Gaudich. (s. Afr.: 2 spp.) 1992000

Immelman. Pers. comm.

mixta Solms

(= *P. hypoleuca* Wedd.)

Shrub or tree, up to 5 m high. Leaves entire, usually densely greyish white-felted below, dark green above. Anthers white. *Flowers (perianth) greenish yellow; October to March*. On rocky hillsides in open bushveld, often in sandy soil. *Stephen 573*.

W S C N E

parasitica (Forssk.) Schweinf.

(= *P. procridioides* (Wedd.) Wedd.)

Erect or ascending perennial herb, up to 1 m high. Leaves with dentate margins, not felted below. *Flowers (perianth) green; November to February*. In undergrowth of forests, usually near water. *Pole Evans 3942*.

W S C N E

Urtica L. (s. Afr.: 3 spp.)

1974000

Immelman. Pers. comm.

urens L.

Erect, ascending or procumbent annual herb, up to 0.5 m high, monoecious. Leaves 22–45 mm long, bases cuneate. Achenes 1.5–2.0 mm long. *Flowers green; November*. A weed of open disturbed places, in shade or sun. Invader. *Repton 379*.

W S C N E

VAHLIACEAE

Herbs or small shrublets. Leaves opposite, without stipules. Flowers regular, in axillary pairs. Calyx tube cup-shaped, fused to ovary. Petals 5, free. Stamens 5, arising from margin of disc; filaments free. Ovary inferior, 1-locular; styles 2, free. Fruit a many-seeded capsule.

Vahlia Thunb. (s. Afr.: 2 spp.)

3201000

Bridson. 1975. Kew Bull. 30: 163–182.

Bullock. 1966. Acta bot. neerl. 15: 84–85.

capensis (L.f.) Thunb. subsp. **vulgaris** Bridson var. **vulgaris**

Much-branched herb, up to 380 mm tall. Leaves linear to linear-lanceolate, sparsely to densely glandular-hairy or less often glabrous. Petals shorter than calyx lobes. *Flowers yellow; November to April*. Grassland. *Germishuizen 1037*.

W S C N E

capensis (L.f.) Thunb. subsp. **vulgaris** Bridson var. **latifolia** Burt Davy

Many-stemmed herb. Leaves all oblanceolate, 4–5 mm wide. Petals exceeding calyx lobes, 5.5 mm long. Filaments with large basal appendages. No specimens in PRE.

W S C N E

capensis (L.f.) Thunb. subsp. **vulgaris** Bridson var.

linearis E. Mey. ex Bridson

(= *V. cynodonteti* Dinter)

Many-stemmed herb, up to 150 mm tall. Stems not or sometimes slightly woody at base. Leaves narrowly linear to linear, always glabrous. *Flowers yellow; October to March*. Grassland. *Gerstner 6506*.

W S C N E

VALERIANACEAE

Herbs, odoriferous. Leaves opposite, often in a basal rosette; stipules absent. Flowers irregular. Petals 3–5, united. Stamens 1–4, arising from petals. Ovary inferior, 3-locular. Fruit an achene, crowned with sometimes enlarged calyx.

Valeriana L. (s. Afr.: 1 sp.)

8532000

Cannon. 1983. F.Z. 7,1: 75–77.

Burt. 1986. Notes R. bot. Gdn Edinb. 43,3: 402–405.

capensis Thunb. var. **capensis**

Perennial herb, 1.5 m high. Stems arising singly, unbranched. All leaves pinnate or pinnatifid. Inflores-

cence branches arising only near top of stem. *Flowers white; October to February*. Marshy areas and stream-sides in upland grasslands. *De Villiers 35*.

W S C N E

VERBENACEAE

Herbs, shrubs or trees. Stems often 4-angled. Leaves opposite, sometimes whorled, often strongly scented, without stipules. Flowers ± irregular, frequently ± 2-lipped. Petals 5, united. Stamens 4, arising from corolla. Ovary superior, usually 4-locular, each locule containing 2 ovules. Fruit a drupe or berry, rarely 4 nutlets.

Key after Dyer, Gen. 1: 517 (1975).

- 1a Inflorescence centripetal (spicate or racemose); ovules basal, erect, anatropous 2
- 1b Inflorescence cymose; ovules inserted laterally or pendulous 9
- 2a Inflorescence a branched raceme; calyx accrescent; ovary 8-locular, of 4 pyrenes, each 2-locular and 2-seeded **Duranta**
- 2b Inflorescence a spike or unbranched spicate raceme 3
- 3a Ovary 4-locular, with single ovule in each locule 4
- 3b Ovary 2-locular, with single ovule in each locule; fruit of (1)2 pyrenes 5
- 4a Calyx hardly accrescent; pyrenes 4, each 1-seeded **Verbena**
- 4b Calyx accrescent in fruit; pyrenes 2, each 2-seeded **Priva**
- 5a Rachis thickened, with depressions for each flower **Stachytarpheta**
- 5b Rachis of inflorescence terete, without depressions 6
- 6a Calyx 6 mm long or longer **Chascanum**
- 6b Calyx ± 2 mm long 7
- 7a Fruit drupaceous, in small clusters; calyx truncate or obscurely toothed **Lantana**
- 7b Fruit dry and hard; calyx 2–4-lobed 8
- 8a Erect shrublets **Lippia**
- 8b Prostrate herbs, rooting at nodes **Phyla**
- 9a (1) Calyx coloured, membranous, with obconic or campanulate tube **Karomia**
- 9b Calyx not coloured and membranous 10
- 10a Leaves usually compound; drupe entire, containing a single, 4-locular pyrene **Vitex**
- 10b Leaves usually simple 11
- 11a Fruit an entire drupe containing a single, 4-locular pyrene **Premna**
- 11b Fruit a 4-lobed or -furrowed drupe with 4 pyrenes **Clerodendrum**

Chascanum E. Mey. (s. Afr.: 14 spp.) 7148030
Moldenke. 1938. Reprium nov. Spec. Regni veg. 45: 113–156, 300–319.
Fernandes. 1984. Bolm Soc. broteriana 57: 265–273.

adenostachyum (Schauer) Moldenke
(= *Plexipus adenostachyus* (Schauer) R. Fern.)
Undershrub, 0,3–0,6 m high. Leaves elliptic or obovate-elliptic, long-cuneate at base, sharply acute or subacute (in outline) at apex, dentate in upper half. Cocci separating spontaneously when ripe. *Flowers white, cream or yellow; October to March.* Grassland on hillsides. *Van Wyk 1396.*
W S C N E

hederaceum (Sond.) Moldenke var. hederaceum
(= *Plexipus hederaceus* (Sond.) R. Fern. var. *hederaceus*)
Undershrub, 300–450 mm tall. Pubescence on stems and branches short and glandular. Leaves long-cuneate at base, rounded or obtuse (in outline) at apex, cuneate-orbicular or cuneate-ovate, dentate in upper half. Cocci separating spontaneously when ripe. *Flowers white, cream, yellow; October to March.* Grassland. *Meeuse 9464.*
W S C N E

hederaceum (Sond.) Moldenke var. natalense (H. Pearson) Moldenke
(= *Plexipus hederaceus* (Sond.) R. Fern. var. *natalensis* (H. Pearson) R. Fern.)
Undershrub, 300–450 mm tall. Pubescence of long-hirsute nonglandular hairs mixed with short glandular hairs. Cocci and leaves as in var. *hederaceum*. *Flowers white, cream or yellow; October to February.* Grassland. *Codd & De Winter 4954.*
W S C N E

incisum (H. Pearson) Moldenke
(= *Plexipus incisus* (H. Pearson) R. Fern.)
Brownish puberulent subshrub, up to 250 mm tall. Leaf blades deeply incised. Spikes 25–75 mm long, few-flowered. Cocci not separating spontaneously when ripe. *Flowers white, cream or yellow; September to March.* Grassland, riverbanks. *Codd & Dyer 3932.*
W S C N E

latifolium (Harv.) Moldenke var. latifolium
(= *Plexipus latifolius* (Harv.) R. Fern. var. *latifolius*)
Undershrub, 0,3–0,9 m high. Leaf blades entire, broader than 25 mm, elliptic, densely pubescent beneath. Cocci not separating spontaneously when ripe. *Flowers white or pale mauve; June to November.* Grassland. *Hilliard & Burt 18430.*
W S C N E

latifolium (Harv.) Moldenke var. **glabrescens** (H. Pearson) Moldenke
(= *Plexipus latifolius* (Harv.) R. Fern. var. *glabrescens* (H. Pearson) R. Fern.)

Undershrub, 0,3–0,9 m high. Cocci and leaf blades as in var. *latifolium* but leaves glabrous or glabrate beneath. *Flowers white; August to November. Grassland. Onderstall 435.*

W S C N E

latifolium (Harv.) Moldenke var. **transvaalense** Moldenke
(= *Plexipus latifolius* (Harv.) R. Fern. var. *transvaalensis* (Moldenke) R. Fern.)

Undershrub, 0,3–0,9 m high. Cocci and leaf blades as in var. *latifolium* but leaves minutely puberulent or strigillose beneath, margins ciliolate. *Flowers white to mauve; October to February. Grassland. Mauve 4408.*

W S C N E

pinnatifidum (L.f.) E. Mey. var. **pinnatifidum**
(= *Plexipus pinnatifidus* (L.f.) R. Fern. var. *pinnatifidus*)

Undershrub, 300 mm tall. Leaf blades deeply pinnatifid. Spikes abbreviated, 10–45 mm long, usually few-flowered. Cocci not separating spontaneously when ripe. *Flowers white, cream or dull yellow; July to June. Grassland, often in shade. Codd 2711.*

W S C N E

pinnatifidum (L.f.) E. Mey. var. **racemosum** Schinz ex Moldenke
(= *Plexipus pinnatifidus* (L.f.) R. Fern. var. *racemosus* (Schinz ex Moldenke) R. Fern.)

Undershrub, 300 mm tall. Cocci and leaf blades as in var. *pinnatifidum*. Spikes elongated, 50–120 mm long, many-flowered. *Flowers white, cream or pale yellow; September to March. Grassland or savanna. Meeuse 9192.*

W S C N E

schlechteri (Gürke) Moldenke
(= *Plexipus schlechteri* (Gürke) R. Fern. var. *schlechteri*)

Undershrub, up to 500 mm tall. Leaf blades lanceolate, entire, sessile. Cocci separating spontaneously when ripe. *Flowers white; December. Hillsides in grassland. Schlechter 11764.*

W S C N E

Clerodendrum L. (s. Afr.: 21 spp.) 7191000

Baker. 1900. F.T.A. 5,2: 292–313.
Pearson. 1901. F.C. 5,1: 218–225.
Phillips. 1921. Flower. Pl. Afr. 1: t. 19.
Winkler. 1922. Reprium nov. Spec. Regni veg. 18: 124.
Thomas. 1937. Bot. Jb. 68: 2–96.
Meeuse. 1957–58. Flower. Pl. Afr. 32: t. 1274.
Verdcourt. 1992. F.T.E.A. Verbenaceae: 84–144.
Herman. 1995. Bothalia 25: 100–102.

caeruleum N.E. Br.

Shrub, up to 0,9 m high. Branches 4-angular. Leaves opposite, irregularly serrate, shortly petiolate. Cymes 3-flowered. Flowers zygomorphic. Calyx 2–5 mm long.

Corolla tube $\pm$ 10 mm long. *Flowers white or blue; November to February. In kloofs. Van der Schijff 2319.*

W S C N E

discolor (Klotzsch) Vatke var. **oppositifolium** Thomas

Shrub. Branches 4-angular. Branches and abaxial leaf surfaces velvety hairy. Leaves opposite, shortly petiolate, margins revolute. Calyx hairy, 4 mm long. *Flowering September. Roberts Tvl. Mus. 15844.*

W S C N E

glabrum E. Mey. var. **glabrum**

Small tree or shrub, 0,6–10,0 m high. Branches and leaves softly white-pilose to glabrous. Inflorescence terminal, compact, peduncle $\pm$ 15 mm long. Flowers actinomorphic. Calyx 2–3 mm long. Corolla tube glabrous, 5–7 mm long. *Flowers white with pink or pale purple; October to March. Sandy flats, hillsides, bushveld, streambanks, forest. Dyer 3407.*

W S C N E

louwalbertsii P.P.J. Herman

Perennial herb, up to 0,8 m high. Leaves linear to narrowly elliptic, in whorls of 3 or 4 or opposite. Inflorescence a thyrs. Flowers zygomorphic. Corolla tube 4–8 mm long. *Flowers purple; October to March. Grassland, open woodland, hillsides, koppies. Reid 436.*

W S C N E

makanjanum H.J.P. Winkl.

Subsucculent shrub, 1–3 m high. Leaves decussate, elliptic or ovate-elliptic, margin serrate from $\pm$ middle to apex. Inflorescence a terminal panicle of racemously arranged cymes. Flowers zygomorphic. Calyx 4–6 mm long. Corolla tube curved. *Flowers mauve, blue, white, pale green or dull yellow-green with pinkish purple lip; August to October. Rocky outcrops and hillsides. Hardy 973.*

W S C N E

myricoides (Hochst.) Vatke
(= *Cyclonema myricoides* Hochst.)

Shrub, 0,9–2,0 m high. Leaves opposite or in whorls of 3 or 4, narrowly to broadly elliptic, ovate-elliptic or oblanceolate, entire to coarsely serrate. Cymes lax, long-pedunculate, terminal or clustered at ends of short leafy axillary branches. Flowers zygomorphic. Segments of lower lip of corolla longer than upper, corolla tube $\pm$ 12 mm long. *Flowers greenish white or mauve; November to February. Forest or hillsides. Germishuizen 944.*

W S C N E

pleiosciadium Gürke

Subshrub, 0,9–2,5 m high. Leaves in whorls of 3(4), discolorous, ovate, rounded at base, sparingly pilose, distinctly petiolate, irregularly deeply toothed, petioles forming recurved spines. Cymes terminal, compound. Flowers actinomorphic. Corolla tube 12–20 mm long.

Flowers white; April. Sandveld. Van der Schijff & Marais 3695.

W S C N E

suffruticosum Gürke var. **suffruticosum**

Small tree or shrub, 0,9–1,2 m or up to 5 m high. Leaves opposite, broadly elliptic, strongly serrate, pubescent on both surfaces, petioled. Flowers in terminal panicles, actinomorphic. Calyx 7 mm long, pubescent. Flowers blue or mauve; May to January. Hillsides or rocky outcrops. Codd 4168.

W S C N E

suffruticosum Gürke var. **natalense** Moldenke

Small tree or shrub, up to 5 m high. Leaves much more serrate than in var. *suffruticosum*. Flowers blue, purple or white; October to January and in April. Hillsides. Schweickerdt & Verdoorn 602.

W S C N E

ternatum Schinz

(= *C. ternatum* Schinz var. *lanceolatum* (Gürke) Moldenke, = *C. wilmsii* Gürke)

Undershrub, 0,15–2,00 m high. Stems unarmed. Leaves sessile, linear-lanceolate to oblanceolate, ternate, serrate in upper part. Cymes lax, axillary, with leaves, flowers actinomorphic. Calyx 3 mm long. Corolla tube 15–30 mm long, segments of lower lip of corolla longer than upper. Flowers white or cream to purple with red or purple stamens; September to May. Bushveld, hillsides, grassland. Herman 179.

W S C N E

triphylum (Harv.) H. Pearson var. **triphylum**

(= *Cyclonema triphylla* Harv.)

Perennial herb, 0,15–0,60 m high. Leaves entire, in whorls of 3 or 4 or opposite, oblanceolate to obovate to elliptic, profusely gland-dotted beneath. Cymes axillary, flowers zygomorphic. Calyx 3–4 mm long. Corolla tube 3–6 mm long. Flowers purplish blue; July to June. Grassland, hillsides. Codd 8033.

W S C N E

uncinatum Schinz

(= *C. spinescens* (Oliv.) Gürke, = *Kalaharia uncinata* (Schinz) Moldenke)

Shrub or subshrub, 0,3–1,5 m high, with thick soft tomentum and curved orange-brown spines. Leaves opposite or subopposite, shortly petiolate, ovate to elliptic, entire, 15–40 × 10–30 mm. Flowers solitary, axillary, zygomorphic, scarlet or orange-red with yellow throat; November to February. Sandy soil. Peeters, Gericke & Burelli 228.

W S C N E

Duranta L. (s. Afr.: 1 sp.)

7162000

Moldenke. 1973. Ann. Mo. bot. Gdn. 60,1: 87–91.
Bromley 1984. Kew Bull. 39: 803–804.

erecta L.*

(= *D. repens* L.)

Small tree or shrub, up to 7 m high. Branchlets glabrate, often drooping, spiny. Leaf blades glabrate beneath, mostly thin-textured, 15–50 mm long. Fruit a drupe, yellow or orange-yellow, enclosed by fruiting calyx. Flowers blue, lilac, violet or light violet-blue, purple; September to May. Roadsides and watercourses. Native to South America. Schlieben 10051.

W S C N E

Karomia Dop (s. Afr.: 1 sp.)

7192010

Moldenke. 1981. Phytologia 48,4: 323, 354–356, 358.
Fernandes. 1985. Garcia de Orta 7,1–2: 33–46.

speciosa (Hutch. & Corbishley) R. Fern. forma **speciosa**

(= *Holmskioldia speciosa* Hutch. & Corbishley, = *H. tettensis* auct. non (Klotzsch) Vatke)

Small tree or shrub, 4–6 m high. Leaf blades toothed. Calyx pink, mauve to dull pink-lilac. Fruiting calyx 12–35 mm wide. Flowers violet or purple to deep blue; November to April. Mixed bushveld on rocky mountainsides. Codd & De Winter 3254.

W S C N E

speciosa (Hutch. & Corbishley) R. Fern. forma **flava** (Moldenke) R. Fern.

(= *Holmskioldia tettensis* forma *flava* Moldenke)

Shrub, 1,0–3,5 m high. Same as forma *speciosa* but mature calyx yellow. Flowers yellow; December and March. Rocky hillsides. Retief & Herman 125.

W S C N E

Lantana L. (s. Afr.: 6 spp.)

7144000

Moldenke. 1940. Phytologia 1,12: 421–422.
Friedrich-Holzhammer. 1967. F.S.W.A. 122: 6–7.
Moldenke. 1973. Ann. Mo. bot. Gdn. 60: 47–58.

camara L.*

Shrub, up to 2 m high. Stems and branches prickly. Inflorescence capitate. Lowest bractlets not conspicuously larger than the rest. Pubescence on peduncles and branches minute and inconspicuous, leaves scabrelous. Flowers orange-yellow or orange; July to June. Disturbed places especially roadsides and streambanks. Native to South America. Stirton 10594.

W S C N E

mearnsii Moldenke var. **latibracteolata** Moldenke

Shrub, 1,0–1,5 m high. Inflorescence spicate, subcapitate when young, long-pedunculate. Lowest bractlets large and foliaceous. Pubescence on branches hirsutulous, scabridous with age. Flowers bright light pinkish mauve or white; October to March. Shaded hillsides or valleys. Galpin 12977.

W S C N E

rugosa Thunb.

(= *L. salvifolia* Jacq.)

Shrub, up to 2 m high, densely shortly pubescent. Inflorescence elongate, spicate. Lowest bractlets larger than the rest. *Flowers pink to mauve; September to June*. Hillsides, grassland and woodland, often in shade of bush clumps. *Scheepers 1440*.

W S C N E

trifolia L.*

Perennial herb or subshrub, up to 2,5 m high. Stems appressed-pubescent or strigose. Leaves ternate. Inflorescence elongate, spicate. *Flowers pink, lavender, lilac or purple; September to May*. Grassland, thickets, forest margins, riverine forest. Native to South America. *Stalmans 391*.

W S C N E

Lippia L. (s. Afr.: 6 spp.)

7145000

Pearson. 1901. F.C. 5,1: 192–197.

Moldenke. 1965. *Phytologia* 12: 225, 434.

javanica (Burm. f.) Spreng.

(= *L. asperifolia* Rich.)

Shrub, 0,7–5,0 m high. Bracts less than 4 mm long and 3 mm wide, not exceeding flowers. Calyx distinctly 2-lobed. *Flowers white, greenish white, cream, yellowish white or yellow; July to June*. Hillsides, forest edges, streambanks, grassland and roadsides. *Codd & De Winter 5014*.

W S C N E

pretoriensis H. Pearson

Shrub, up to 500 mm tall. Leaves crenate, thickened and recurved margins. Calyx obscurely 2-lobed. *Flowering January to March*. Leendertz sub Tvl. Mus. 12366.

W S C N E

rehmannii H. Pearson

Shrub, 0,5–1,1 m high. Leaves crenate-serrate, adult leaves elliptic, not longer than 25 mm. Calyx subtruncate or with 2 very short rounded lobes. Bracts shorter than 4 mm. *Flowers white or cream-coloured; October to May*. Rocky hillsides, dry sandveld and along roadsides. *Meeuse 9543*.

W S C N E

scaberrima Sond.

Shrub, up to 0,6 m high. Calyx distinctly 2-lobed. Bracts longer than 4 mm and broader than 3 mm, exceeding flowers. *Flowers white or cream; August to April*. Grassland and along roadsides. *Meeuse 9453*.

W S C N E

wilmsii H. Pearson

Shrub, up to 0,6 m high. Leaves serrate. Bracts longer than 4 mm. Calyx truncate or obscurely 4-toothed.

Flowers white, cream or yellow; July to June. Grassland, often in burnt veld. *Codd 6668*.

W S C N E

Phyla Lour. (s. Afr.: 1 sp.)

7145010

Pearson. 1901. F.C. 5,1: 193.

Bailey. 1977. *Hortus* Third: 865.

nodiflora (L.) Greene var. **nodiflora**

(= *Lippia nodiflora* (L.) Michx.)

Prostrate herb. Leaves obovate, cuneate and entire in basal half, sharply and coarsely dentate towards apex. Peduncles much longer than subtending leaves. Calyx deeply 2-lobed. Corolla 2-lipped. *Flowers white or pink to lilac; July to February*. Water's edge or seepage areas. *Codd 10445*.

W S C N E

Premna L. (s. Afr.: 2 spp.)

7185000

Pearson. 1901. F.C. 5,1: 211–212.

Pieper. 1929. *Bot. Jb.* 62: 142: 80.

mooiensis (H. Pearson) W. Piep.

(= *Vitex mooiensis* H. Pearson)

Small tree, up to 5 m high. Cymes arranged in a terminal panicle. Leaves opposite, ovate or elliptic, entire or sometimes coarsely serrate towards apex, glabrous or finely scabrid-pubescent. *Flowers white; August to February*. Kloofs and woodland. *Codd & De Winter 5154*.

W S C N E

Priva Adans. (s. Afr.: 5 spp.)

7153000

Moldenke. 1937. *Reprium nov. Spec. Regni veg.* 41: 1–76.

Moldenke. 1979. *Phytologia* 44: 108–109.

africana Moldenke

Perennial herb, up to 400 mm tall, viscid throughout. Leaf blades acuminate at apex, lacinate-dentate, sessile or subsessile. Fruiting calyx conspicuously inflated. *Flowers white, light blue or purple; July and October to March*. Savanna, limestone or calcareous soil. *Van der Schijff 3508*.

W S C N E

cordifolia (L.f.) Druce var. **abyssinica** (Jaub. & Spach)

Moldenke

(= *P. abyssinica* Jaub. & Spach)

Herb, up to 1 m high. Leaves broadly ovate, 10–75 mm wide, distinctly petiolate, strigillose above, strigillose-puberulent beneath. Fruiting calyx conspicuously inflated. Cocci echinate, with 2 parallel longitudinal rows of spines, spines separate to base, cocci minutely puberulent. *Flowers white to mauve with purple markings; September to March and in June*. Woodland or savanna in shade of trees or scrub. *Codd 5249*.

W S C N E

cordifolia (L.f.) Druce var. **australis** Moldenke

Herb, up to 1 m high. Leaves 25 mm wide, distinctly petiolate, with teeth acute and sharp. Fruiting calyx conspicuously inflated. Cocci echinate, with 2 parallel longitudinal rows of spines, spines connected by firm membranes to form 2 spreading shelf-like fans on mature cocci. *Flowers white with purple markings; October to February.* Bushveld. *Leendertz Tvl. Mus.* 8549.

W	S	C	N	E
---	---	---	---	---

meyeri Jaub. & Spach var. **meyeri**

Perennial herb, up to 500 mm tall. Leaves ovate, 10–30 mm wide, distinctly petiolate. Fruiting calyx conspicuously inflated. Cocci not echinate, merely scrobiculate-reticulate or slightly verruculose. *Flowers white with pale mauve markings; September to May.* Riverine bush in shade of trees or shrubs. *Scheepers* 522.

W	S	C	N	E
---	---	---	---	---

Stachytarpheta Vahl (s. Afr.: 2 spp.) 7151000

Baker. 1900. F.T.A. 5: 283–285.

Hepper. 1963. F.W.T.A. 2,2: 432–434.

Fernandes. 1984. Bolm Soc. broteriana 57: 87–111.

Herman. 1991. Bothalia 21: 57.

mutabilis (Jacq.) Vahl*

Shrub, up to 3 m high. Leaves slightly discoloured, densely velvety pubescent on lower surface. Inflorescence rachis coarse, wider than 5 mm when dry (up to 10 mm wide after flowering). Corolla limb 10–20 mm wide. *Flowers red; November to December.* Roadsides and disturbed places. Native to tropical America. *Stalmans* 754.

W	S	C	N	E
---	---	---	---	---

urticifolia (Salisb.) Sims*

Perennial herb or subshrub, 0,5–2,0 m high. Leaves glabrous. Inflorescence rachis more slender, $\pm$ 3 mm wide (up to 7 mm wide after flowering). Corolla limb usually narrower than 10 mm. *Flowers dark purple-blue, mauve or royal blue with light or white throat; January.* Roadside weed, grassland, bushland and forest. Probably native to tropical Africa. *Durant LN* 1180.

W	S	C	N	E
---	---	---	---	---

Verbena L. (s. Afr.: 6 spp.) 7138000

Franco. 1972. Fl. Europ. 3: 122–123.

Roessler & Merxmüller. 1982. Mitt. bot. StSamml., Münch. 18: 187–200.

bonariensis L.*

Perennial herb, up to 2 m high. Leaves dentate to incised-serrate, sessile, amplexicaul. Spikes very dense, mostly sessile and crowded. Bracts equalling or shorter than calyx. Inflorescence not glandulose. *Flowers blue or mauve; July to June.* Grassland, along

streams and riverbanks, marshy places. Native to South America. *Codd* 5689.

W	S	C	N	E
---	---	---	---	---

brasiliensis Vell.*

Robust herb, 0,7–1,5 m high. Leaves distinctly petiolate or tapering to cuneate-attenuate base, dentate. Inflorescence scarcely ramified, shorter than 50 mm, very dense and appressed pubescent. *Flowers purple; September to May.* Grassland, along riverbanks and streambanks and disturbed places. Native to South America. *MacDonald* 70.

W	S	C	N	E
---	---	---	---	---

litoralis Humb., Bonpl. & Kunth*

Herb, up to 0,8 m high. Leaves petiolate or tapering to cuneate-attenuate base, 30–100 mm long, lanceolate or oblong-lanceolate, scabrid. Inflorescence 750 mm long, dense at apex, more open below and finely strigillose. *Flowers purple; November and March to May.* Grassland. Native to South America. *Van Hoepen* 1725.

W	S	C	N	E
---	---	---	---	---

officinalis L.*

Perennial herb, 0,3–0,6(–1,0) m high. Stem scabrid on angles, usually erect. At least lower leaves deeply incised to 1- or 2-pinnatisect, petiolate. Spikes slender, fruiting spikes 100–250 mm. *Flowers pale pink, purple or blue; July to June.* Along riverbanks and streambanks and disturbed wet places. Native to Europe and Asia. *Codd* 10384.

W	S	C	N	E
---	---	---	---	---

tenuisecta Briq.*

Semi-erect perennial herb, up to 500 mm tall. Leaves pinnatisect or pinnately incised. *Flowers large and showy, in a dense spike; blue-purple, sometimes white; September to March.* Grassland, disturbed places. Native to South America. *Meeuse* 9138.

W	S	C	N	E
---	---	---	---	---

venosa Gillies & Hook.*

Perennial herb, up to 0,6 m high. Leaves dentate to incised-serrate, sessile, amplexicaul. Spikes very dense, pedunculate, not crowded. Bracts distinctly longer than calyx. Inflorescence glandulose. *Flowers reddish purple; September to May.* Grassland and disturbed places. Native to South America. *Jacobsen* 4861.

W	S	C	N	E
---	---	---	---	---

Vitex L. (s. Afr.: 9 spp.) 7186000

Pieper. 1929. Bot. Jb. 62: 142–2–80.

Bruce. 1951. Bothalia 6: 237.

Bredenkamp. 1988. M.Sc. thesis, University of Pretoria.

Bredenkamp & Botha. 1993. S. Afr. J. Bot. 59: 611–622.

Bredenkamp & Botha. 1996. Bothalia 26: 141–151.

ferruginea Schumach. & Thonn. subsp. **amboniensis**
(Gürke) Verdc. var. **amboniensis**
(= *V. laevigata* Baker,
= *V. amboniensis* Gürke)

Shrub, 2.5–3.0(–9.0) m high. Leaves 5–7-pinnate, leaflets petiolate, adaxial surfaces sparsely soft-hairy, apex acute to acuminate. Calyx cup-shaped in fruit. Ovary densely hairy in upper half. Fruit fleshy. *Flowers with white tube and pale purple lobes; November to February*. Deep sandy soil and rocky koppies. *Van Wyk 4015*.

W S C N E

ferruginea Schumach. & Thonn. subsp. **amboniensis**
(Gürke) Verdc. var. **amaniensis** (W. Piep.) Verdc.

Shrub, 2.5–3.0 m high. Leaves 5–7-pinnate, leaflets petiolate, adaxial surfaces softly hairy, apex to a lesser extent acute, not acuminate. Calyx cup-shaped in fruit. Ovary densely hairy in upper half. Fruit fleshy. Among rocks on koppies. *Van der Schijff 740*.

W S C N E

harveyana H. Pearson
(= *V. geminata* H. Pearson,
= *V. schlechteri* Gürke)

Shrub, 2–3(–4) m high. Young branches with grooves. Flowers fairly large, 16–18 mm long. Calyx cup-shaped in fruit. Ovary glabrous in upper half. Fruit fleshy. *Flowers bright violet; September to February*. In forests, among rocks in sandy soil along riverbanks and streambanks. *Van der Schijff 1762*.

W S C N E

obovata E. Mey. subsp. **obovata**
(= *V. reflexa* Pearson)

Tree, (2.5–)3.0–4.0(–9.0) m high. Adaxial leaf surfaces glabrous, median leaflet (17–)21–29(–48) mm broad. Calyx, fruit and shape of median leaflet as in var. *wilmsii*. *Flowers white; November to March*. Among rocks on hillsides, along riverbanks. *Liebenberg 3313*.

W S C N E

obovata E. Mey. subsp. **wilmsii** (Gürke) C.L. Bre-denkamp & D.J. Botha
(= *V. wilmsii* Gürke var. *wilmsii*)

Tree, (2–)3–4(–9) m high. Adaxial leaf surfaces white, softly hairy, median leaflet oblong, elliptic, narrowly ovate or narrowly obovate, (22–)37–38(–70) mm broad. Calyx bell-shaped in fruit. Fruit dry, obovate. *Flowers pale mauve; October to January*. Among rocks on hillsides; grassland, along stream and riverbanks. *Retief & Herman 29*.

W S C N E

patula E.A. Bruce

Shrub, (1.0–)2.4–4.0(–5.0) m high. Adaxial surfaces of leaflets sparsely hairy, scabrous. Flowers small, 5–10 mm long. Calyx cup-shaped in fruit. Ovary glabrous in upper half. Fruit fleshy, spherical. *Flowers mauve; November to February*. In forests on sand. *Codd 6936*.

W S C N E

poora Corbishley

Small to medium-sized tree, up to 5 m high. Adaxial surfaces of leaflets softly hairy. Flowers small, 5–10 mm long. Calyx cup-shaped in fruit. Ovary glabrous. Fruit elliptic, fleshy. *Flowers white to pale blue or purple; October to January*. Hillsides. *Marais 1263*.

W S C N E

rehmannii Gürke

Tree, (2–)3–4(–9) m high. Leaflets glabrous, median leaflet narrowly oblong, narrowly elliptic or lanceolate. Calyx bell-shaped in fruit. Fruit dry, obovate. *Flowers white to pale mauve; October to March*. Hillsides and deep sandy soil. *De Winter 7815*.

W S C N E

zeyheri Sond. ex Schauer

Tree, (2.5–)3.0(–6.0) m high. Leaves grey-green, adaxial leaf surfaces hairy, white, densely velvety. Calyx bell-shaped in fruit. Fruit dry, obovate. *Flowers white; November to April*. Stony soil on hillsides. *Joffe 129*.

W S C N E

VIOLACEAE

Trees, shrubs, shrublets or herbs. Leaves usually alternate; stipules small and leafy. Flowers regular or irregular. Sepals 5, equal or unequal, sometimes with ear-like, basal lobes. Petals 5, free, subequal or unequal with lowest larger than others and often spurred or saccate at base. Stamens 5, usually in a ring around ovary. Ovary superior, 1-locular. Fruit a capsule.

Key after Obermeyer in F.S.A. 22: 42 (1976).

- 1a Flowers actinomorphic; trees or shrubs **Rinorea**
- 1b Flowers zygomorphic, anterior petal longer or shorter, often spurred; herbs or undershrubs 2
- 2a Pedicels articulate; stipules entire, small, linear-acuminate; anterior petal much longer than the other 4; with or without spur **Hybanthus**
- 2b Pedicels inarticulate; stipules small, with 2 basal teeth or foliaceous, lacinate; anterior petal shorter than the other 4, spurred **Viola**

Hybanthus Jacq. (s. Afr.: 4 spp.) 5271000

Obermeyer. 1976. F.S.A. 22: 46–50.

capensis (Thunb.) Engl.(= *H. natalensis* (Harv.) Burt Davy)

Small, hispid perennial herb, up to 250 mm tall. Anterior petal 15 mm long, without basal pouch. Filaments glabrous, entire, without an appendage. Capsule glabrous or pubescent; seed globose, pitted. *Flowers white with lilac stripes, violet or mauve and cream throat; November to January.* In grassland or damp sheltered places, in valleys or margins of subtropical forests. *Rogers 21878.*

W S C N E

densifolius Engl.

Small, scabridulous annual herb, up to 150 mm tall. Shortly pedicellate flowers congested on short stems. Anterior petal 7 mm long, with basal pouch protruding from between anterior sepals. Capsule scabridulous. *Flowers whitish, pink or purplish.* Sandy areas (Kalahari region). *Zwanziger 742* (specimen not in PRE).

W S C N E

enneaspermus (L.) F. Muell.(= *H. enneaspermus* (L.) F. Muell. var. *serratus* Engl.)

Perennial herb, 200–500 mm tall. Anterior petal 5–20 mm long, with basal pouch protruding from between anterior sepals. Capsule smooth, glabrous; seed fusiform to ovoid, longitudinally ribbed. *Flowers pink to bluish or violet; October to May.* Widespread, often invading disturbed areas. *Meeuse 10263.*

W S C N E

Rinorea Aubl. (s. Afr.: 3 spp.) 5262000

Obermeyer. 1976. F.S.A. 22: 42–46.

angustifolia (Thouars) Baill.(= *R. natalensis* Engl.)

Evergreen tree or shrub, up to 10 m high. Leaves 40–80 mm long, soft, dark green, closely dentate, on slender, shortly hairy, dark branchlets. *Petals spreading to recurved, white; September to January.* Understorey tree or shrub in evergreen forests. *Scheepers 766.*

W S C N E

Viola L. (s. Afr.: 4 spp.) 5274000Valentine *et al.* 1968. Fl. Europ. 2: 280.

Obermeyer. 1976. F.S.A. 22: 50–52.

abyssinica Steud. ex Oliv.

Creeping or scrambling herb. Stems rooting at nodes. Leaves cordiform, soft, crenate. Seed ovoid, with distinct spongy aril. *Upper 2 pairs of petals whitish; anterior petal pale to dark blue or violet; November to April.* Widespread; common in clearings and along paths. *Hilliard 4753.*

W S C N E

tricolor L.*

Erect annual, biennial or perennial herb, up to 300 mm tall. Lower leaves cordate to ovate, obtuse, crenate, upper leaves ovate to lanceolate, ± cuneate at base, crenate. Stipules deeply and pinnately lobed, terminal segment larger than the others, lanceolate, entire or crenate, leaf-like. Corolla exceeding calyx. Spur 3.0–6.5 mm, up to twice as long as calycine appendages. *Flowers violet, yellow or parti-coloured; November.* Grassland. Native to Europe and Asia. *Germishuizen 3463.*

W S C N E

VISCACEAE

Shrubby aerial hemiparasites of woody dicotyledons, often with swollen nodes, brittle. Leaves opposite, leathery, without stipules. Male and female flowers on the same or different plants. Flowers minute, regular, unisexual, greenish or yellowish. Sepals 2–4. Petals absent. Stamens as many as and opposite sepals. Ovary inferior, 1-locular. Fruit a 1-seeded berry with sticky inner layer.

Viscum L. (s. Afr.: 17 spp.) 2093000

Wiens & Toelken. 1979. F.S.A. 10.1: 43–56.

capense Lf. subsp. capense

Diocious shrub, up to 500 mm tall, parasitic on species of *Scolopia*, *Combretum*. Nodes with minute but conspicuous scale leaves. Bracteal cups the same colour as stem. Berries sessile, white, smooth. *Flowers green; June to July.* Bushveld, kloofs. *Barnard 595.*

W S C N E

combreticola Engl.

Leafless, dioecious shrub, up to 2 m high, parasitic primarily on species of *Combretum*. Stems flattened, espe-

cially when young, older stems becoming rounded. Internodes mostly 30–35 × 4–6 mm. Berries sessile, ellipsoid, warty when young. *Flowers yellowish green; July to June.* Mixed bushveld and open woodland. *Viljoen 9.*

W S C N E

menyharthii Engl. & Schinz

Leafless, dioecious shrub, up to 1 m high, parasitic only on *Ficus* species. Stems rounded at all developmental stages. Internodes 40–60 mm long. Staminate dichasia always 3-flowered, subtended by bracteal cups. Berries sessile, heavily warted when young. *Flowers green; May to July.* Mopane veld. *Wiens 5315.*

W S C N E

obscurum Thunb.

Leafy, dioecious shrub, up to 1 m high, parasitic on numerous hosts like species of *Acacia*, *Manilkara*. Leaves oblanceolate-ovate. Persistent style on mature fruit 1 mm long. Berries white at maturity, 6–7 mm long, pedicel 3–6 mm long. *Flowers yellowish green; June to July*. Bushveld, thorn scrub. *Van Jaarsveld 546*.

W S C N E

oreophilum Wiens

Leafy, dioecious shrub, up to 1 m high, parasitic on *Pterocelastrus*. Persistent style on mature fruit 0.5 mm long. Berries orange at maturity, 4–5 mm long, usually 2 per node. Pedicels 3–4 mm long. *Flowers green; March to May*. Forest. *Wiens 5344*.

W S C N E

rotundifolium L.f.

Leafy, monoecious shrub, up to 500 mm tall. Internodes usually longer than 12 mm. Parasitic on many diverse hosts including species of *Euclea*, *Boscia*. Leaves usually more than 8 × 4 mm. Berries orange, 4–5 mm long, with pedicel 3–4 mm long. *Flowers yellow; July to December*. Mixed bushveld and riverine scrub. *Wiens 5436*.

W S C N E

schaeferi Engl. & Kar. Krause

Leafy, monoecious shrub, up to 200 mm tall. Parasitic on species of *Maytenus*. Internodes usually shorter than 12 mm. Leaves usually less than 8 × 4 mm. Berries pale yellow, 3 mm long, with short pedicel 1.5 mm long. *Flowering July*. *Louw 322*.

W S C N E

spragueanum Burt Davy

Leafy, monoecious shrub, up to 1 m high, parasitic on species of *Grewia*, *Rhus*, *Vitex*. Internodes of leafy stems 6-ribbed, mostly 15–20 mm long. Berries warted when young, sessile, with persistent linear stigma. *Flowers green; July to December*. Forest. *Wiens 5345*.

W S C N E

subserratum Schltr.

Leafy, dioecious shrub, up to 1 m high, parasitic on species of *Kirkia*, *Maytenus* and *Rhus*. Leaves obovate to broadly oblanceolate, margin often minutely serrulate. Berries with short pedicel and persistent capitate stigma, warty when young, but nearly smooth at maturity. *Flowers green; July to October*. Bushveld, rocky outcrops. *Stalmans 1244*.

W S C N E

triflorum DC. subsp. **nervosum** (Hochst. ex A. Rich.)

M.G. Gilbert

Leafy, monoecious shrub, up to 500 mm tall, parasitic on species of *Rapanea*, *Cassipourea* and *Syzygium*. Leaves yellowish green, thin, usually with an undulate margin, distinctly petiolate. Berries smooth, sessile-subsessile, white at maturity. *Flowers greenish yellow; October*. Forest. *Van Wyk 4673*.

W S C N E

verrucosum Harv.

Leafless, dioecious shrub, up to 1 m high, parasitic on species of *Acacia* and *Combretum*. Internodes 15–25 mm long. Berries warted when young, pedicel 1–2 mm long. *Flowers yellowish green; July to June*. Mopane veld, bushveld and bankenveld. *Wiens 5299*.

W S C N E

VITACEAE

Climbing shrubs or woody vines with tendrils opposite leaves, often watery sap and ± swollen nodes. Leaves alternate, usually palmately compound, without stipules. Inflorescences opposite leaves. Flowers small, regular, greenish; disc present. Petals 4–6, free or often ± united at tips and falling as bud opens. Stamens 4–6, free, opposite petals. Ovary superior, embedded in disc; style short. Fruit a berry.

Key after Dyer, Gen.1: 350–351 (1975).

- 1a Petals usually 5 or 6 2
- 1b Petals 4 3
- 2a Inflorescence usually with tendrils; style ± conical and very short; disc with vertical furrows **Ampelocissus**
- 2b Inflorescence never with tendrils; style slender, readily visible; disc without furrows **Rhoicissus**
- 3a Flower bud cylindrical or lageniform, with apex open, ± inflated, constricted near middle; disc divided into 4 glands; leaves usually compound **Cyphostemma**
- 3b Flower bud globose or conical, not constricted at middle; disc annular 4
- 4a Flower bud conical to ovoid; disc thick; leaves usually simple, occasionally digitately compound; cymes usually leaf-opposed; fruit 1(2)-seeded **Cissus**
- 4b Flower bud depressed-globose; disc thin; leaves 3-foliate or pedate; cymes usually axillary; fruit (2–)4-seeded **Cayratia**

Ampelocissus *Planch.* (s. Afr.: 2 spp.) 4910000
Wild & Drummond. 1963. F.Z. 2: 439–443.

obtusata (*Welw. ex Baker*) *Planch.* subsp. *kirkiana*
(*Planch.*) Wild & R.B. Drumm.
(= *A. kirkiana* *Planch.*)

Scrambler or climber, usually with tendrils, up to 2 m high. Leaves digitate, hairy, usually with a ± villous indumentum at least below, terminal leaflet lamina 40–110 mm long, apex acute or obtuse. *Flowers deep red*. Woodland, rocky outcrops. *Codd 5314*.

W S C N E

Cayratia *Juss.* (s. Afr.: 1 sp.) 4918020
Wild & Drummond. 1963. F.Z. 2: 491–493.

gracilis (*Guill. & Perr.*) *Suess.*
(= *Cissus gracilis* *Guill. & Perr.*)

Herbaceous climber. Leaves pedate, 5–8-foliolate, petioles up to 60 mm long, leaflet lamina narrowly ovate to ovate, margin coarsely serrate. *Flowers green; January to April*. Woodland. *Scheepers 608*.

W S C N E

Cissus *L.* (s. Afr.: 8 spp.) 4918000
Kunth. 1894. F.C. 1: 249–253.
Burtt Davy. 1932. Fl. Transvl. 2: 474–477.
Wild & Drummond. 1963. F.Z. 2: 448–459.
Merxmüller & Schreiber. 1973. F.S.W.A. 80: 2.

cornifolia (*Baker*) *Planch.*
(= *C. lonicerifolia* C.A. Sm.)

Erect plant, occasionally with tendrils. Young shoots often ferruginous-tomentose, becoming glabrescent when adult. Leaves simple, narrowly elliptic to elliptic. *Flowers yellow; September to February*. Woodland. *Buitendag 793*.

W S C N E

diversilobata C.A. Sm.

Shrub, up to 0,6 m high. Leaves simple, 2- or 3-lobed or 3-foliolate, terminal leaflet markedly cuneate to base and serrate-dentate in upper half. *Flowers yellowish green; November to December*. Grassland. *Kluge 2743A*.

W S C N E

fragilis *E. Mey. ex Kunth*

Climber. Leaves simple, cordate at base, apex acuminate, lateral veins prolonged into marginal ciliary processes. *Flowers yellowish green with red markings; December to April*. Gallery forest, riverbanks. *Kluge 1713*.

W S C N E

quadrangularis *L.*

(= *C. succulenta* (Galpin) Burtt Davy,
= *C. tetragona* Harv.)

Climber. Stems and branches green, succulent, quadrangular, winged but wings never corky, frequently

leafless. Leaves simple. *Flowers yellow; September to December*. Bushveld, woodland and mopane veld. *Codd & Dyer 4665*.

W S C N E

rotundifolia (*Forssk.*) *Vahl*

Climber, with tendrils. Leaves thick, succulent, circular to ovate, up to 80 × 80 mm, apex obtuse, margin crenate. Flower bud and ovary glabrous. *Flowers greenish yellow; October to February*. Woodland and bushveld. *Schlieben 9351*.

W S C N E

Cyphostemma (*Planch.*) *Alston*
(s. Afr.: 34 spp.) 4918010

Wild & Drummond. 1963. F.Z. 2: 459–491.
Van der Merwe. 1971. *Bothalia* 10,3: 436.
Suessenguth. 1973. F.S.W.A. 80: 3–8.
Retief. 1981. *Bothalia* 13: 460–461.
Retief & Glen. 1987. *Flower. Pl. Afr.* 49: t. 1954.
Retief & Glen. 1987. *Flower. Pl. Afr.* 49: t. 1955.
Retief & Glen. 1987. *Flower. Pl. Afr.* 49: t. 1956.

anatomicum (C.A. Sm.) Wild & R.B. Drumm.
(= *Cissus anatomicus* C.A. Sm.)

Climber. Leaves always 3-foliolate. Stems, inflorescences and petioles glandular pubescent. Leaflets sessile or with very short petiolules, terminal leaflet elliptic. *Flowers yellowish green; January*. Grassland, woodland, streambanks. *Kluge 433*.

W S C N E

buchananii (*Planch.*) *Desc. ex Wild & R.B. Drumm.*

Climber, drying black. Leaves digitately 3–5-foliolate, petioles up to 50 mm long, leaflets elliptic to narrowly obovate, up to 110 × 70 mm, petiolules up to 15 mm long. *Flowers red; December to January*. Scrub forest, rocky slopes. *Buitendag 393*.

W S C N E

cirrhosum (*Thunb.*) *Desc. ex Wild & R.B. Drumm.*

subsp. *transvaalense* (Szyszyl.) C.A. Sm.
(= *Vitis cirrhosa* Thunb. var. *transvaalensis* Szyszyl.)

Climber. Stems eglandular. Leaves 3–5-foliolate, leaflets petiolate, slightly fleshy. Pubescence rather short. *Flowers yellowish green; October to December*. Woodland. *Vorster 2208*.

W S C N E

dasypleurum (C.A. Sm.) J.J.M. van der Merwe
(= *Cissus dasypleurus* C.A. Sm.)

Scandent, prostrate herb. Tendrils absent. Leaves 3–5-foliolate, petioles up to 15 mm long, usually folded, falcate, leaflets hairy, margins unevenly dentate, densely covered with short hairs. *Flowers yellow; November to January*. Grassland, sandy soil. *Lang sub TRV 31100*.

W S C N E

hardyi *Retief*

Caudiciform succulent, up to 0,5 m high. Leaves simple or more usually 3(–5)-foliolate, greyish green, whitish

tomentose. Peduncles and pedicels with numerous, stipitate glandular trichomes. *Flowers yellowish green, tinged with maroon; October to December.* Woodland. *Hardy 1256.*

W S C N E

hereroense (Schinz) Desc.

(= *Cissus hereroensis* Schinz)

Succulent prostrate herb. Leaves folded, hairy, digitately 3–6-foliolate, sessile, leaflet lamina oblanceolate-lorate to very narrowly elliptic, $\pm 100 \times 17$ mm, margin coarsely serrate, base narrowly cuneate. Fruit subglobose, puberulous. *Flowers greenish yellow; November to February.* Grassland. *Hanekom 2450.*

W S C N E

hispidiflorum (C.A. Sm.) J.J.M. van der Merwe

(= *Cissus hispidiflora* C.A. Sm.)

Succulent herb. Stems erect or sometimes semitrailing. Indumentum of glandular hairs, densely intermixed with white bristly hairs. Leaves simple, broadly ovate, up to 80×50 mm. Inflorescence densely glandular-pilose with stipitate glands. *Flowers dull yellow; November to December.* Bushveld. *Codd 2279.*

W S C N E

humile (N.E. Br.) Desc. ex Wild & R.B. Drumm. subsp.

dolichopus (C.A. Sm.) Wild & R.B. Drumm.

(= *C. dolichopus* C.A. Sm.)

Prostrate herb with stems up to 0.6 m long. Leaves simple or deeply 3-lobed, oblong-elliptic to broadly ovate, up to 200×120 mm, upper surface densely pubescent or puberulous. *Flowers green and red; November to February.* Stony soil, with a tolerance for serpentine or chrome-bearing soils. *Codd 4881.*

W S C N E

lanigerum (Harv.) Desc. ex Wild & R.B. Drumm.

(= *Cissus lanigera* Harv.)

Herbaceous climber. Tendrils present. Stems whitish pubescent. Leaves 5-foliolate, petiolate, leaflets obovate, up to 55×30 mm, margin serrate, undersurface with venation prominent, greyish tomentose. *Flowers yellow; December to March.* Bushveld and woodland. *Young 2489.*

W S C N E

oleraceum (Bolos) J.J.M. van der Merwe

(= *Cissus oleraceus* Bolos)

Prostrate herb, glaucous green, glabrous. Leaves simple, sessile, leaf lamina thick and fleshy when fresh, broadly ovate to orbicular, up to 220×240 mm. *Flowers green with reddish pink tips; November to December.* Bushveld. *Story 1690.*

W S C N E

paucidentatum (Klatt) Desc. ex Wild & R.B. Drumm.

Herbaceous climber. Stems without glandular hairs. Leaves 3–5-foliolate. Bracts and bracteoles up to 6 mm long, ovate-lanceolate. *Flowers green.* Forest and woodland. No specimens in PRE.

W S C N E

puberulum (C.A. Sm.) Wild & R.B. Drumm.

(= *Cissus puberula* C.A. Sm.)

Herbaceous climber. Stems and leaves grey-pubescent. Leaves 3–5-foliolate, leaflets slightly fleshy, narrowly elliptic to obovate, 80×23 (–45) mm, petiolules up to 10 mm long. *Flowers yellow; December to March.* Bushveld. *Kluge 2584.*

W S C N E

schlechteri (Gilg & M. Brandt) Desc. ex Wild & R.B.

Drumm.

(= *Cissus unguiformifolius* C.A. Sm.)

Prostrate herb or scrambler, glaucous, tendrils present. Leaves digitately 3–5-foliolate, sessile or subsessile, leaflets linear-lanceolate to narrowly oblong-obovate, margin sparsely but coarsely serrate. *Flowers cream; November to January.* Rocky or sandy soil. *Van der Schijff 3971.*

W S C N E

segmentatum (C.A. Sm.) J.J.M. van der Merwe

(= *Cissus segmentatum* C.A. Sm.)

Prostrate to erect herb. Leaves glaucous green, simple, narrowly oblanceolate to ovate-elliptic, up to 60×25 mm, margin coarsely dentate. *Flowering December.* Bushveld. *Van der Merwe 1.*

W S C N E

simulans (C.A. Sm.) Wild & R.B. Drumm.

(= *Cissus simulans* C.A. Sm.)

Prostrate or climbing herb. Leaves digitately 3–5-foliolate, leaflets usually sessile, sparsely pubescent above, pubescent and glandular at least on nerves below. *Flowers dull white; November to February.* Open woodland. *Codd 5201.*

W S C N E

spinosopilosum (Gilg & M. Brandt) Desc.

(= *Cissus spinosopilosum* Gilg & M. Brandt)

Prostrate herb. Stems, petioles and leaflets, especially on nerves, with stipitate glands. Leaves 3-foliolate, petioles up to 30 mm long, leaflets with teeth on margin glandular. *Flowers yellowish green; October to November.* Bushveld and grassland. *Codd 6644.*

W S C N E

subciliatum (Baker) Desc. ex Wild & R.B. Drumm.

(= *Cissus subciliata* (Baker) Planch.)

Herbaceous climber. Stems with scattered glandular-capitate hairs. Leaves 3-foliolate, sessile or subsessile, lateral leaflets subsessile, petiolule of terminal leaflet up to 15 mm long. *Flowers cream; January to March.* Woodland. *Herman 798.*

W S C N E

sulcatum (C.A. Sm.) J.J.M. van der Merwe

(= *Cissus sulcatus* C.A. Sm.)

Climber. Leaves 2–4 times pinnate, bluish green, margin dentate, terminal leaflet not longer than 15 mm.

Flowers white; October to March. Woodland, on dolomite or norite. Codd 6364.

W S C N E

woodii (Gilg & M. Brandt) Desc.
(= *Cissus woodii* Gilg & M. Brandt)

Dwarf shrub or climber, up to 1 m high. Stems, inflorescences, leaflets (on nerves below and on petiolules) densely covered with stipitate glands. Leaves 5-foliate, undersurface of leaflets usually covered with sessile glands. Flowers yellow; October to April. Grassland. Phillips 3286.

W S C N E

Rhoicissus Planch. (s. Afr.: 7 spp.) 4917000

Wild & Drummond. 1963. F.Z. 2: 444–448.
Retief. 1980. Bothalia 13: 146–147.
Urton *et al.* 1986. S. Afr. J. Bot. 52: 389–396.
Retief. 1993. Bothalia 23: 231–233.

laetans Retief

Shrub, up to 2 m high. Leaves simple, discolorous, glaucous, glabrous, with net-veining on undersurface prominent, leaf apex acute to obtuse, margin entire. Flowers greenish yellow; November to February. Mixed bushveld and grassland. Herman 737.

W S C N E

revoilii Planch.

(= *R. cymbifolius* C.A. Sm.,
= *R. schlechteri* Gilg & M. Brandt)

Shrub, creeper or small tree, up to 3 m high. Leaves 3-foliate, leaflet lamina up to 120 × 60 mm, terminal leaflets narrowly lanceolate, lanceolate, oblanceolate

or ovate, lateral leaflets lanceolate, subfalcate-oblong or rhomboid. Flowers yellowish green; October to January. Bushveld, riverine scrub and woodland. Coetzee 980, Theron 1881.

W S C N E

rhomboidea (E. Mey. ex Harv.) Planch.

(= *Cissus rhomboidea* E. Mey. ex Harv.)

Woody climber. Leaves 3-foliate, leaflet lamina up to 60 × 40 mm, terminal leaflet obovate, lateral leaflets asymmetrically rhomboid, margins with dentations having an apiculus at least 1 mm long. Flowers green; November to January. Forest, forest margins and thickets. Vorster 370.

W S C N E

tomentosa (Lam.) Wild & R.B. Drumm.

(= *Cissus capensis* Willd.,
= *R. capensis* (Willd.) Planch.)

Plant ferruginous-tomentose. Leaves simple, sometimes shallowly lobed, broadly transversely elliptic or reniform, mature leaves glabrescent above. Flowers green; October to February. Forest. Pienaar 73.

W S C N E

tridentata (L.f.) Wild & R.B. Drumm. subsp. **cuneifolia**

(Eckl. & Zeyh.) Urton
(= *R. cuneifolia* (Eckl. & Zeyh.) Planch.,
= *R. erythroides* (Fresen.) Planch.)

Shrub or woody climber, up to 10 m or higher. Leaves 3-foliate, glabrescent or fulvous- or ferruginous-pubescent, terminal leaflet with more than 4 dentations or crenations, narrowly to broadly obovate. Flowers greenish yellow; January to April. Grassland, bushveld, woodland, riverbanks. Herman 720.

W S C N E

ZYGOPHYLLACEAE

Herbs. Branches often jointed at nodes. Leaves opposite, pinnately compound or with 1–3 leaflets, with stipules. Flowers regular; disc usually present. Petals 5, free. Stamens 5, 10 or 15, with scale-like appendages at base of filament. Ovary superior, 5-locular; style 1. Fruit a capsule or divided into spiny segments (cocci) which do not open.

Key after Hadidi in F.T.E.A. Zygophyllaceae: 1 (1985).

Fruit splitting into 5 spiny indehiscent mericarps; leaves paripinnate **Tribulus**
Fruit capsular; leaves 1–3-foliate **Zygophyllum**

Tribulus Tourn. ex L. (s. Afr.: 5 spp.) 3978000

Schweickerdt. 1939. Bothalia 3: 159–178.

terrestris L.

Spreading, prostrate, usually decumbent, annual herb. Leaves pinnate, usually unequal with 1 of a pair shorter than the other. Petals 3–12 mm long. Intrastaminal glands free. Fruit at length breaking up into 5 cocci. Cocci usually with 2 lateral divergent acute spines inserted above middle and 2 shorter spines directed and

inserted near base of coccus. Flowers yellow; January to March. Grassland, disturbed areas. Balsinhas 3642.

W S C N E

zeyheri Sond. subsp. **zeyheri**

Prostrate perennial herb. Leaves unequal, the larger up to 90 mm long, up to 9-jugate, the smaller up to 50 mm long, up to 4-jugate. Petals broadly cuneate, up to 25 mm long. Intrastaminal glands connate to form cup at base of ovary. Mature fruits armed or almost devoid of

spines, at length breaking up into 5 cocci. *Flowers yellow; October to April.* Woodland, deep sand, disturbed areas. *Pienaar 335.*

W	S	C	N	E
---	---	---	---	---

Zygophyllum L. (s. Afr.: 44 spp.) 3965000

Van Huyssteen. 1937. *Zygophyllum* (Thesis Friedrich-Wilhelms-Univ., Berlin).

Schreiber. 1973. F.S.W.A. 65.

Hadidi. 1985. F.T.E.A. Zygophyllaceae: 1–10.

pubescens Schinz

(= *Z. cuneifolium* Eckl. & Zeyh.)

Woody shrublet, up to 1 m high. Older leafless stems thick and woody. Leaves succulent, produced on shorter, younger, flower-producing stems, petiole short, persistent, leaflets ovate to narrowly ovate, ± 10 mm long. Fruit winged. *Flowers 10–12 mm long, yellow; September to April.* Red, loamy sand. *Peeters, Gericke & Burelli 257.*

W	S	C	N	E
---	---	---	---	---

FURTHER READING

This literature is recommended for further reading and for illustrations.

- ACOCKS, J.P.H. 1988. *Veld types of South Africa*, 3rd edn. *Memoirs of the Botanical Survey of South Africa* No. 57.
- BAKER, H.A. & OLIVER, E.G.H. 1968. *Ericas in southern Africa*. Purnell, Cape Town.
- BARKHUIZEN, B.P. 1978. *Succulents of southern Africa*. Purnell, Cape Town.
- BAYER, M.B. 1982. *The new Haworthia handbook*. National Botanic Gardens of South Africa, Kirstenbosch.
- BOTHA, D.J. & DE VILLIERS, P.D. 1984. *Trees, shrubs and climbers of the Faan Meinjies Nature Reserve*. City Council, Klerksdorp.
- BURROWS, J.E. 1990. *Southern African ferns and fern allies*. Frandsen Publishers, Johannesburg.
- CARR, J.D. 1976. *The South African acacias*. Conservation Press (Pty.) Ltd. Aloe Book Agency, Amalgam, Johannesburg.
- CARR, J.D. 1988. *Combretaceae in southern Africa*. Tree Society of southern Africa, Johannesburg.
- COATES PALGRAVE, K. 1977. *Trees of southern Africa*. Struik, Johannesburg.
- COATES PALGRAVE, K., P. & M. 1985. *Everyone's guide to trees of South Africa*. Struik, Cape Town.
- COLE, D.T. 1988. *Lithops: flowering stones*. Acorn Books, Johannesburg.
- COURT, D. 1981. *Succulent flora of southern Africa*. Balkema, Cape Town.
- DAVIDSON, L. & JEPPE, B. 1981. *Acacias*. Centaur, Johannesburg.
- DE WINTER, B., M. & KILLICK, D.J.B. 1966. *Sixty-six Transvaal trees*. Voortrekker Press, Pretoria.
- DE WINTER, B., VAHRMEIJER, J. & VON BREITENBACH, F. 1987. *Die nasionale boomlys/The national list of trees*. Van Schaik, Pretoria.
- DU PLESSIS, N. & DUNCAN, G. 1989. *Bulbous plants of southern Africa*. Tafelberg, Cape Town.
- DYER, R.A. 1983. *Ceropegia, Brachystelma and Riocreuxia in South Africa*. Balkema, Rotterdam.
- FABIAN, A. & GERMISHUIZEN, G. 1982. *Transvaal wild flowers*. Macmillan, S.A., Johannesburg.
- FLORA OF SOUTHERN AFRICA. 1963. Vol. 26 (Myrsinaceae, Primulaceae, Plumbaginaceae, Sapotaceae, Ebenaceae, Oleaceae, Salvadoraceae, Loganiaceae, Gentianaceae, Apocynaceae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1966. Vol. 1 (Stangeriaceae, Zamiaceae, Podocarpaceae, Pinaceae, Cupressaceae, Welwitschiaceae, Cultivated gymnosperms, Typhaceae, Helobiaceae, Zosteraceae, Potamogetonaceae, Ruppiaceae, Zanichelliaceae, Najadaceae, Aponogetonaceae, Juncaginaceae, Alismataceae, Hydrocharitaceae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1970. Vol. 13 (Brassicaceae, Caparaceae, Resedaceae, Moringaceae, Droseraceae, Roridulaceae, Podostemaceae, Hydrostachyaceae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1975. Vol. 16,1 (Fabaceae: Mimosoideae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1976. Vol. 22 (Ochnaceae, Clusiaceae, Elatinaceae, Frankeniaceae, Tamaricaceae, Canellaceae, Violaceae, Flacourtiaceae, Turneraceae, Passifloraceae, Achariaceae, Loasaceae, Begoniaceae, Cactaceae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1977. Vol. 16,2 (Fabaceae: Caesalpinioideae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1979. Vol. 10,1 (Loranthaceae, Viscaceae). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1980. Vol. 27,4 (Asclepiadaceae: *Brachystelma, Ceropegia, Riocreuxia*). Botanical Research Institute, Department of Agricultural Technical Services, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1983. Vol. 7,2,2 (Iridaceae: Ixioidae: *Syringodea, Romulea*). Botanical Research Institute, Department of Agriculture, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1983. Vol. 33,7,2 (Asteraceae: Inuleae: Gnaphaliinae, first part). Botanical Research Institute, Department of Agriculture, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1984. Vol. 21,1 (Tiliaceae). Botanical Research Institute, Department of Agriculture, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1985. Vol. 4,2 (Eriocaulaceae, Xyridaceae, Commelinaceae, Pontederiaceae, Juncaceae). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1985. Vol. 14 (Crassulaceae). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1985. Vol. 28,4 (Lamiaceae). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1986. Pteridophyta. Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1986. Vol. 18,3 (Simaroubaceae, Bursaceae, Ptaeroxylaceae, Meliaceae, Malpighiaceae). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1986. Vol. 31,1,2 (Rubiaceae [Rubioidae, second part]: Paederieae, Anthospermeae, Rubieae). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1988. Vol. 16,3,6 (Fabaceae: Papilionoideae: Crotalariaeae, *Aspalathus*). Botanical Research Institute, Department of Agriculture & Water Supply, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1992. Vol. 5,3 (Dracaenaceae, Asparagaceae, Luzuriagaceae, Smilacaceae). National Botanical Institute, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1993. Vol. 19,3,1 (Anacardiaceae: *Rhus*). National Botanical Institute, Pretoria.
- FLORA OF SOUTHERN AFRICA. 1995. Vol. 30,3,1 (Acanthaceae: Justiciinae: *Metarungia, Siphonoglossa, Rhinacanthus, Duvernoia, Justicia, Monechma, Adhatoda, Anisotes*). National Botanical Institute, Pretoria.
- FOX, F.W. & YOUNG, M.E.N. 1982. *Food from the veld*. Delta Books, Craighall.
- GIBBS RUSSELL, G.E., WATSON, L., KOEKEMOER, M., SMOOK, L., BARKER, N.P., ANDERSON, H.M. & DALLWITZ, M.J. 1990. *Grasses of southern Africa. Memoirs of the Botanical Survey of South Africa* No. 58. National Botanic Gardens/Botanical Research Institute, South Africa.
- GIDDY, C. 1974. *Cycads of South Africa*. Purnell, Cape Town.
- GOLDBLATT, P. 1986. *The moraeas of southern Africa. Annals of Kirstenbosch Botanic Gardens* 14. National Botanic Gardens, Cape Town.
- GOLDBLATT, P. 1989. *The genus Watsonia. Annals of Kirstenbosch Botanic Gardens* 19. National Botanic Gardens, Cape Town.

- GOODE, D. 1989. *Cycads of Africa*. Struik, Winchester.
- GORDON-GRAY, K.D. 1995. *Cyperaceae in Natal*. *Strelitzia* 2. National Botanical Institute, Pretoria.
- HARDY, D. & FABIAN, A. 1992. *Succulents of the Transvaal*. Southern Book Publishers, Johannesburg.
- HENDERSON, L. & MUSIL, K.J. 1987. *Plant invaders of the Transvaal*. Bulletin 412. Department of Agriculture & Water Supply, Pretoria.
- HENDERSON, L. 1995. *Plant invaders of southern Africa*. Agricultural Research Council, Pretoria.
- HENDERSON, M. & ANDERSON, J. 1966. *Common weeds in South Africa*. *Memoirs of the Botanical Survey of South Africa* No. 37. Department of Agriculture & Water Supply, Pretoria.
- HENDERSON, M., FOURIE, D.M.C. & WELLS, M.J. 1987. *Declared weeds and alien invader plants in South Africa*. Bulletin 413. Department of Agriculture & Water Supply, Pretoria.
- HENNESSY, E.F. 1972. *South African erythrinas*. Natal Branch of the Wildlife Protection and Conservation Society of South Africa, Durban.
- HILLIARD, O.M. 1977. *Compositae in Natal*. University of Natal Press, Pietermaritzburg.
- HILLIARD, O.M. & BURTT, B.L. 1971. *Streptocarpus—an African plant study*. University of Natal Press, Pietermaritzburg.
- HILLIARD, O.M. & BURTT, B.L. 1991. *Dierama: the hairbells of Africa*. Acorn Books, London.
- JACOBSEN, W.B.G. 1983. *The ferns and fern allies of southern Africa*. Butterworths, Durban.
- JEPPE, B. 1969. *South African aloes*. Purnell, Johannesburg.
- JOFFE, P. 1993. *The gardener's guide to South African plants*. Tafelberg, Cape Town.
- LEIGHTON, F.M. 1965. *The genus Agapanthus L'Hérit*. *Journal of South African Botany*, Supplement No. 4. National Botanic Gardens of South Africa, Cape Town.
- LETTY, C. 1962. *Wild flowers of the Transvaal*. Trustees Wild Flowers of the Transvaal Book Fund, Johannesburg.
- LETTY, C. 1975. *Trees of South Africa*. Tafelberg, Cape Town.
- LETTY, C. 1980. *More trees of South Africa*. Tafelberg, Cape Town.
- LOWREY, T.K. & WRIGHT, S. (eds) 1987. *The flora of the Witwatersrand*, Volume 1. The Monocotyledonae. Witwatersrand University Press, Johannesburg.
- LUCAS, A. & PIKE, B. 1971. *Wild flowers of the Witwatersrand*. Purnell, Cape Town.
- MUNDAY, J. 1988. *Poisonous plants in South African gardens and parks: a field guide*. Delta Books, Johannesburg.
- MUSIL, C.F. 1973. *Water plants of Natal*. Wildlife Protection and Conservation Society of South Africa.
- ONDERSTALL, J. 1984. *Transvaal lowveld and escarpment including the Kruger National Park*. *South African Wild Flower Guide* 4. Botanical Society of South Africa, Cape Town.
- PALMER, E. & PITMAN, N. 1972. *Trees of southern Africa*, Vols 1–3. Balkema, Cape Town.
- PIENAAR, K. 1984. *The South African what flower is that?* Struik, Cape Town.
- PIENAAR, K. 1985. *Grow South African plants*. Struik, Cape Town.
- POOLEY, E. 1993. *A complete field guide to the trees of Natal, Zululand and Transkei*. Natal Flora Publications Trust, Durban.
- REBELO, T. 1995. *Sasol proteas. A field guide to the proteas of southern Africa*. Fernwood Press, Vlaeberg, in association with the National Botanical Institute.
- REYNOLDS, G.W. 1982. *The aloes of South Africa*. Balkema, Cape Town.
- ROURKE, J.P. 1980. *The proteas of southern Africa*. Purnell, Johannesburg.
- SCHUMANN, D. & KIRSTEN, G. 1992. *Ericas of South Africa*. Fernwood Press, Cape Town.
- SCOTT, C.L. 1985. *The genus Haworthia*. Aloe Books, Johannesburg.
- SNIJMAN, D. 1984. *A revision of the genus Haemanthus L. (Amaryllidaceae)*. *Journal of South African Botany* Supplementary Volume No. 12.
- STEWART, J. 1982. *Wild orchids of southern Africa*. Macmillan S.A., Johannesburg.
- STEYN, M. 1994. *South African acacias. Identification guide/identifikasiegids*. Published by the author.
- STIRTON, C.H. (ed.) 1978. *Plant invaders: beautiful, but dangerous*. Department of Nature & Environmental Conservation, Cape Provincial Administration, Cape Town.
- STOKES, H. 1967. *What tree is that?* Purnell, Johannesburg.
- TREE SOCIETY OF SOUTHERN AFRICA. 1964. *Trees and shrubs of the Witwatersrand*. Witwatersrand University Press, Johannesburg.
- VAHRMEIJER, J. 1981. *Poisonous plants of southern Africa*. Tafelberg, Cape Town.
- VAN DER WALT, J.J.A. 1973. *Pelargoniums of southern Africa*. Purnell, Cape Town.
- VAN DER WALT, J.J.A. & VORSTER, P.J. 1981. *Pelargoniums of southern Africa*, Vol. 2. Juta, Cape Town.
- VAN DER WALT, J.J.A. & VORSTER, P.J. 1988. *Pelargoniums of southern Africa*, Vol. 3. *Annals of Kirstenbosch Botanic Gardens* 16. National Botanic Gardens, Cape Town.
- VAN GOGH, J. & ANDERSON, J. 1988. *Trees and shrubs of the Witwatersrand, Magaliesberg & Pilanesberg*. Struik, Cape Town.
- VAN OUDTSHOORN, F.P. 1992. *Guide to grasses of South Africa*. Briza, Pretoria.
- VAN WYK, B. & MALAN, S. 1988. *Field guide to the wild flowers of the Witwatersrand and Pretoria region*. Struik, Cape Town.
- VAN WYK, B.-E. & SMITH, G. 1996. *Guide to the aloes of South Africa*. Briza Publications, Pretoria.
- VAN WYK, P. 1972. *Trees of the Kruger National Park*, Vol. 1. Purnell, Johannesburg.
- VAN WYK, P. 1974. *Trees of the Kruger National Park*, Vol. 2. Purnell, Johannesburg.
- VAN WYK, P. 1984. *Field guide to the trees of the Kruger National Park*. Struik, Cape Town.
- VAN WYK, P. 1993. *Southern African trees: a photographic guide*. Struik, Cape Town.
- VOGTS, M. 1982. *South Africa's Proteaceae: know them and grow them*. Struik, Cape Town.
- VON BREITENBACH, F. & J. 1990. *National list of indigenous trees*, 2nd edn. Dendrological Foundation, Pretoria.
- VON BREITENBACH, F. & J. 1992. *Tree atlas of southern Africa*, Section 1. Dendrological Foundation, Pretoria.

C R O N Q U I S T ' S S Y S T E M

In this chapter, the families of the plants of the northern provinces of South Africa are arranged according to Cronquist's classification system, as given by Brummitt (1992, *Vascular plant families and genera*). Family names not accepted as such by Cronquist but recognized in the present work are printed in italics. The classification of Liliaceae *sens. lat.* by Dahlgren, Clifford & Yeo (1985) is referred to in the treatment of that family.

MAGNOLIOPSIDA

(Dicotyledons in the present work)

MAGNOLIIDAE

Magnoliales

Annonaceae; Canellaceae

Laurales

Trimeniaceae; Lauraceae; Hernandiaceae

Piperales

Piperaceae

Nymphaeales

Nymphaeaceae; Cabombaceae; Ceratophyllaceae

Ranunculales

Ranunculaceae; Menispermaceae

Papaverales

Papaveraceae; Fumariaceae

HAMAMELIDIDAE

Hamamelidales

Hamamelidaceae; Myrothamnaceae

Urticales

Ulmaceae; Cannabaceae; Moraceae; Urticaceae

Myricales

Myricaceae

CARYOPHYLLIDAE

Caryophyllales

Phytolaccaceae; Nyctaginaceae; Aizoaceae; *Mesembryanthemaceae*; Cactaceae; Chenopodiaceae; Amaranthaceae; Portulacaceae; Basellaceae; Caryophyllaceae; *Illecebraceae*

Polygonales

Polygonaceae

Plumbaginales

Plumbaginaceae

DILLENIIDAE

Theales

Ochnaceae; Elatinaceae; Clusiaceae

Malvales

Tiliaceae; Sterculiaceae; Bombacaceae; Malvaceae

Nepenthales

Droseraceae

Violales

Flacourtiaceae; Violaceae; Turneraceae; Passifloraceae; Achariaceae; Cucurbitaceae; Begoniaceae

Salicales

Salicaceae

Capparales

Capparaceae; Brassicaceae; Resedaceae

Ericales

Ericaceae

Ebenales

Sapotaceae; Ebenaceae

Primulales

Myrsinaceae; Primulaceae

ROSIDAE

Rosales

Connaraceae; Pittosporaceae; Escalloniaceae; Greyiaceae; Crassulaceae; *Vahliaceae*; Rosaceae; Chrysobalanaceae

Fabales

Fabaceae

Proteales

Proteaceae

Podostemales

Podostemaceae

Haloragales

Haloragaceae; Gunneraceae

Myrtales

Lythraceae; Thymelaeaceae; Myrtaceae; Onagraceae; Oliniaceae; Melastomataceae; Combretaceae

Rhizophorales

Rhizophoraceae

Cornales

Cornaceae

Santalales

Olaceae; Santalaceae; Loranthaceae; Viscaceae; Balanophoraceae

Rafflesiales

Hydnoraceae

Celastrales

Celastraceae; Salvadoraceae; Aquifoliaceae; Icacinaceae; Dichapetalaceae

Euphorbiales

Buxaceae; Euphorbiaceae

Rhamnales

Rhamnaceae; Vitaceae

Linales

Erythroxylaceae; Linaceae

Polygalales

Malpighiaceae; Polygalaceae

Sapindales

Melanthaceae; Sapindaceae; *Ptaeroxylaceae*; Burseraceae; Anacardiaceae; Simaroubaceae; Meliaceae; Rutaceae; Zygophyllaceae; *Balanitaceae*

Geraniales

Oxalidaceae; Geraniaceae; Balsaminaceae

Apiales

Araliaceae; Apiaceae

ASTERIDAE**Gentianales**

Loganiaceae; Gentianaceae; Apocynaceae; *Periplocaceae*; Asclepiadaceae

Solanales

Solanaceae; Convolvulaceae; Menyanthaceae

Lamiales

Boraginaceae; Verbenaceae; Lamiaceae

Plantaginales

Plantaginaceae

Scrophulariales

Oleaceae; Scrophulariaceae; *Selaginaceae*; Orobanchaceae; Gesneriaceae; Acanthaceae; Pedaliaceae; *Martyniaceae*; Bignoniaceae; Lentibulariaceae

Campanulales

Sphenocleaceae; Campanulaceae; *Lobeliaceae*

Rubiales

Rubiaceae

Dipsacales

Valerianaceae; Dipsacaceae

Asterales

Asteraceae

LILIOPSIDA

(Monocotyledons in the present work)

ALISMATIDAE**Alismatales**

Alismataceae

Hydrocharitales

Hydrocharitaceae

Najadales

Aponogetonaceae; Potamogetonaceae; Najadaceae; Zannichelliaceae

ARECIDAE**Arecales**

Arecaceae

Arales

Araceae; Lemnaceae

COMMELINIDAE**Commelinales**

Xyridaceae; Commelinaceae

Eriocaulales

Eriocaulaceae

Restionales

Flagellariaceae; Restionaceae

Juncales

Juncaceae

Cyperales

Cyperaceae; Poaceae

Typhales

Typhaceae

ZINGIBERIDAE**Zingiberales**

Strelitziaceae; Musaceae; Zingiberaceae; Cannaceae

LILIIDAE**Liliales**

Pontederiaceae; Liliaceae; *Amaryllidaceae*; *Hypoxidaceae*; *Tecophilaeaceae*; Iridaceae; Velloziaceae; Dioscoreaceae

Orchidales

Burmanniaceae; Orchidaceae

GLOSSARY

This list of botanical terms and illustrations has been compiled mainly from Jackson (1928, *A glossary of botanic terms*, 4th edn), Exell & Wild (1960, FZ 1,1: 42–54), Radford *et al.* (1974, *Vascular plant systematics*), and Little & Jones (1980, *A dictionary of botany*), with additions and emendations.

A

abaxial: applied to the side or face away from the axis.

abortion: suppression of parts which are usually present.

absciss band: cut-off band.

acarodomatium (*pl. acarodomatia*): a small cavity of very varying form, found on almost any vegetative part of the plant, which is inhabited, or thought to be inhabited, by mites; commonest types are small pock-ets or pits in axils of main veins with midrib on lower leaf surface.

acalescent/acauline: stemless or seemingly so.

acrescent: increasing in size, e.g. the calyx of some plants in the fruiting stage.

accumbent: lying against, as the cotyledons (in some Brassicaceae) with their edges against the radicle.

achene: a small dry fruit, not splitting when ripe and containing a single seed as in *Clematis*.

acicular: very narrow, stiff and pointed, needle-like.

acinaciform: scimitar-shaped; shaped like a short, curved, single-edged sword.

acroscopic: on the side towards the apex.

acrostichoid: with sporangia spread over the lower surface of the fertile lamina.

actinomorphic: applied to flowers which are radially symmetrical, i.e. capable of being bisected into identical halves in more than one vertical plane, forming mirror images.

aculeate: armed with prickles, as distinct from spines.

aculeolate: with small prickles.

acumen: a long tapering point.

acuminate: having a long, slender, sharp point with a terminal angle less than 45°; margins straight to convex (Figure 5A).

acute: sharp-pointed, with a terminal angle between 45° and 90°; margins straight to convex (Figure 5B).

adaxial: applied to the side or face next to the axis.

adnate: united with another organ or series, e.g. ovary with calyx tube.

adpressed: see **appressed**.

adventitious: applied to plant organs produced in an unusual or irregular position or at an unusual time of development, as in adventitious buds, roots or shoots.

aestivation: the manner in which sepals and petals are arranged in bud (Figure 9).

alate: winged, as in certain stems or seeds; having wing-like extensions.

albumen (*adj. albuminous*): starchy or other nutritive material within the embryo; an older term largely replaced by the term endosperm.

alternate: applied to leaves etc. inserted at different levels along the axis (Figure 3A).

alveola (*pl. alveolae*): small pits on the surface, as on the receptacle of many of the Asteraceae (see **alveolate**).

alveolate: honeycombed; having deep angular sides, like the cavities of a honeycomb.

amphistomatous/amphistomatic: with stomata on both upper and lower leaf surfaces.

amphitropous ovule: an ovule which is attached near its middle and is bent in the form of a U, so that the ovule tip and stalk base are near each other.

amplexicaul: stem-clasping, as when the base of the leaf is dilated and embraces the stem (Figure 7A).

ampullaceous: swollen out in flask-shape.

anastomosis (*vb. anastomose*): union of one vein with another, the connections forming a network.

anatropous: applied to an ovule that is inverted, with the micropyle close to the side of the hilum and the chalaza at the opposite end.

ancipitous/ancipital: two-edged; flattened or compressed, as in stems of certain grasses.

androecium: the stamens and accessories.

androgynophore: a stalk supporting both androecium and gynoecium.

androphore: a stalk supporting the androecium.

angustiseptate: with narrow partitions.

anisophyllous: with the two leaves of a pair of unequal size or shape.

annular: arranged in a circle.

annulus: a specialized ring of thick-walled cells extending from the stalk over the sporangium (ferns); any ring or ringlike structure.

anterior: in a position most remote from the axis.

anthela: a panicle in which the lateral axes exceed the main axis.

anther: the part of the stamen which contains the pollen, usually divided into two pouches or thecae.

anthesis: period during which the flower is open.

anthocarp: a fruit formed by the union of floral parts with the fruit (as in Nyctaginaceae).

anticous/antical: applied to that which is most remote or turned away from the axis; occasionally employed for introrse, as applied to anthers.

antrorse: bent or directed upward or forward.

apex (*pl. apices*): tip; topmost part or terminal end.

aphlebia: stipular outgrowths which occur on the rhachis.

apicule/apiculum (*adj. apiculate*): a short point (Figure 5C).

apocarpous: with carpels free from one another (Figure 11A).

apophysis (*pl. apophyses*): the rounded, exposed thickening on the scales of certain pine cones.

appendiculate/appendaged: with small appendages; hanging in small fragments.

appressed: lying close and flat along the surface.
aquatic: living in water.
arachnoid: cobwebby by soft and fine entangled hairs which are longer than in tomentose.
araneose/araneous: see **arachnoid**.
arborescent: having the shape or characteristic of a tree.
arcuate: curved like a bow.
areolate: divided into distinct spaces.
areole: a small pit or raised spot, often bearing a tuft of hairs or spines; a space marked out on a surface; a small area in a leaf between small veins.
aril: an appendage covering or partly enclosing the seed and arising from the funicle (stalk) of the seed.
arillode: a false aril; a fleshy coat derived from the orifice or micropylar rim of the outer integument instead of the stalk of an ovule.
arista (pl. aristae): a bristle-like appendage as on glumes of many grasses; a bristly awn.
aristate: with a long, bristle-like point (Figure 5D).
article: one of the segments of a jointed fruit, such as a loment.
articulate(d): jointed or separating at a certain point and leaving a clean scar.
articulation: a joint, e.g. between the column and the lower part of the lemma in *Aristida* (Poaceae).
ascendent/ascending: sloping or curving upwards.
asperous: rough, harsh to the touch.
asperulate/asperulous: slightly rough with little points.
atrocastaneous: dark chestnut-coloured; dark brown.
attenuate: tapering gradually (Figure 7B).
auricle (adj. auricled/auriculate): an ear-like lobe or appendage at the base of a leaf or other organ (Figure 7C).
awn: a fine bristle usually terminating an organ as at the tip of the glumes and lemmas of many grasses.
axil: the angle between leaf and branch.
axile placentation: the attachment of ovules to the axis or to the inner angle of the cells of a syncarpous ovary (Figure 11D).
axillary: arising from the axil.
axis (of inflorescence): that part of the stem or branch on which the individual flowers are borne.

B

baccate: berry-like.
barbed: with rigid points or lateral bristles pointing backwards.
barbellate: shortly barbed.
basifixed: fixed by its base, e.g. an anther.
basiscopic: toward the basal or proximal (as opposed to distal) end; facing basally.
beak: a slight narrowing of the lemma below the awns, as distinct from a longer straight column, e.g. in *Aristida* (Poaceae).
bearded: with long awns or with tufts of stiff hairs.
berry: a juicy fruit with soft pericarp, the seeds immersed in pulp.
bi- (in compound words): twice; two; having two.
bicallose: with two callosities.
bicolorous: two-coloured.

bifarious(ly): see **distichous**.
bifid: cleft into two parts at the tip.
bilabiate: 2-lipped, as when two or three lobes of a calyx or corolla stand separate as an upper lip from the others forming a lower lip.
bilocular: with two compartments.
binate: in pairs.
bipinnate: when the primary divisions (pinnae) of a pinnate leaf are themselves pinnate (Figure 1E).
biseriate: arranged in two rows or whorls.
bisexual: having both sexes in the same flower or inflorescence.
brachyblast: a spur or short branch.
bract: a small, often modified leaf associated with the flower or the inflorescence.
bracteal cup: cup-shaped structure formed by fused bracts (e.g. in Viscaceae).
bracteate: possessing or bearing bracts.
bracteole: a small bract.
bristle: a stiff, strong trichome, as in the perianth of some sedges (Cyperaceae).
bulbil: a small daughter bulb, arising around the mother bulb.
bulbous-based: with an inflated base.
bullate: with surface of leaves prominently raised between the veins.
burr: a fruit with hooks or prickles.

C

caducous: falling off early.
caespitose: tufted.
callose/callous: hard and thick in texture; bearing callosities.
callosity: a leathery or hard, thickening of part of an organ.
callus (pl. calli): a thickened part, such as the thickened extension at the base of the lemma at the point of its attachment to the rhachilla.
calyculus (pl. calyculi; adj. calyculate): the bracts around the calyx or an involucre resembling an outer calyx.
calyx (pl. calyces): the outer envelope of the flower, consisting of free or united sepals.
calyx tube: when the sepals are partly united, the lower portion is referred to as the tube and the upper free part as the limb usually divided into calyx teeth, lobes or segments.
campanulate: bell-shaped.
canaliculate: channelled.
canescent: more or less grey or hoary.
capillary: resembling a hair; very slender.
capitate: (1) like the head of a pin, as the stigma of some flowers; (2) collected into compact head-like clusters, as the flowers of Asteraceae.
capitulum (pl. capitula): a dense head-like inflorescence usually of sessile flowers.
capsule: a dry fruit composed of two or more united carpels and either splitting when ripe into pieces called valves or opening by slits or pores.
carina (syn. keel): the two partially united anterior (lowest) petals of a papilionaceous flower or the single similar-shaped anterior petal in many Polygalaceae.

carnose: fleshy.

carpel: a simple pistil formed of a single fruit-leaf folded lengthwise and with its edges united or one of several such united to form a syncarpous ovary.

cartilaginous: hard and tough, as the skin of an apple-pip.

caruncle (*adj.* **caruncular/carunculate**): an outgrowth from integuments at or near the hilum of certain seeds.

caryopsis: a 1-seeded, dry, indehiscent fruit with the seed-coat adnate to the fruit wall, derived from a 1-loculed superior ovary.

castaneous: chestnut-coloured; dark brown.

cataphylls: small scale leaves, e.g. on rhizomes of flowering plants.

catkin: a close, bracteate, often pendulous spike.

caudate: abruptly ending in a long tail-like tip or appendage (Figure 5E).

caudex: a short, thickened, often woody, vertical or branched perennial stem, usually subterranean or at ground level.

caudicle: the stalk of a pollen-mass, in orchids and Asclepiadaceae.

caulescent: with an obvious leafy stem; having an evident stem above ground.

cauliflorous: producing flowers from old wood.

cauline: arising from or inserted on the stem.

centripetal: as in inflorescences, blooming from the outside inward or from the base upward.

chalaza: basal region of the ovule where it joins the funiculus; region of a seed opposite the micropyle.

chamaephyte: a perennial plant, generally woody or partly woody, with the mean height of the renewal buds less than or equal to 0.7 m from the ground.

chartaceous: papery in texture, opaque and thin.

chasmophyte: plant growing in rock crevices.

choripetalous: having separate and distinct petals; polypetalous.

cilia (*sing.* **cilium**): minute, short epidermal outgrowths, such as hairs or scales.

ciliate: with a fringe of hairs along the edge (Figure 4A).

cincinnus (*pl.* **cincinnati**): a tight, unilateral, scorpioid cyme (Figure 8A, 1).

circinnate: inwardly coiled upon itself, as the leaves of *Drosera*.

circumscissile: applied to an organ opening as if cut circularly around the upper part which then comes off like a lid.

cirrhiferous: producing tendrils.

cirrhose: having tendrils (Figure 5F).

cladode: a flattened, foliaceous stem having the form and function of a leaf, but arising in the axil of a minute, bractlike caducous, true leaf.

clathrate: latticed or pierced with apertures.

clavate: club-shaped or thickened towards the end.

clavellate: diminutive of clavate, thickened towards the apex.

claw: the narrow base of a petal, etc.

cleistogamous: fertilization occurring within the unopened flower (as in *Viola*).

club-shaped: gradually thickened from a slender base.

club: pluricellular hair.

coalesce: to fuse.

cobwebby: entangled with fine filaments, arachnoid.

coccus (*pl.* **cocci**; *adj.* **coccous**): a separate part of a lobed fruit (e.g. in Euphorbiaceae).

coflorescence: lateral branches which proceed from main axis below main florescence and terminate in florescences having the same structure and likewise not terminated by a flower.

colliculate: covered with little round elevations.

column: (1) the adnate stamen and style forming a solid central body, as in orchids; (2) the tube of connate filaments, as in Malvaceae, etc.; (3) a straight structure between the apex of the lemma and the branching point of the awns, as in *Aristida* and *Stipagrostis* (see **beak**).

coma: a tuft of hairs at the end of some seeds; a terminal crown of leaves or bracts, e.g. in *Eucomis*.

commissural: of a joint or seam, such as that between two adhering sepals.

commissure: the faces of cohering carpels (e.g. in Apiaceae); the place of joining or meeting.

comose: bearing a tuft of trichomes, usually apically.

complanate: flattened; compressed.

complicate: folded longitudinally.

compound: the opposite of simple; composed of several similar parts, as a leaf of several leaflets; compound fruit: the fruits of separate flowers becoming united into a mass, as in *Maclura* (Moraceae); compound umbel: each ray again bearing an umbel.

compressed: flattened lengthwise from side to side or from front to back.

concolor/concolorous: of uniform colour (e.g. upper and lower leaf surface with the same colour).

conduplicate: folded together lengthwise.

confluent: said of parts of organs which are blended without fusion.

connate: applied to parts of the same series which are united so closely that they cannot be separated without tearing.

connective: the part of an anther which connects its two thecae.

connivent: applied to parts converging so as to be nearer together above than below.

contorted: said of sepals or petals in the bud when each overlaps an adjoining one on one side and is overlapped by the other adjoining one on the other side (Figure 9A).

contractile roots: a specialized type of root, often found in bulbous plants, that undergoes contraction and thereby pulls the bulb or shoot parts deeper into the soil.

convexity: the condition of being convex or having a curvature that bulges towards the point of observation.

convolute: rolled up lengthwise and often twisted at the tip.

cordate: applied to the base of a leaf when it is more or less deeply notched (Figure 7D).

coriaceous: firm, tough, of the consistence of leather.

corm: a tuberous bulb-like rootstock.

cormous: possessing a corm.

corniculate: bearing or terminating in a small hornlike protuberance or process.

corolla: the inner envelope of the flower, consisting of free or united petals.

corona: a circle of appendages between the corolla and stamens, often united in a ring or crown, as in Passifloraceae and Asclepiadaceae; in some members of the Asclepiadaceae, the corona consists of one or two (sometimes three) alternating rows different in size and shape, the outer row nearest to the corolla lobes, the inner row nearest to the staminal column.

corpusculum (*pl. corpuscula*): connection between the arms of the pollen-masses in Asclepiadaceae.

corymb (*adj. corymbose*): a more or less flat-topped inflorescence in which the branches or pedicels start from different points but all reach to about the same level (Figure 8B).

costa (*pl. costae*): the midvein of a single leaf or the rachis of a pinnately compound leaf; the midvein of a pinna or pinnule, in ferns.

costule: the midrib of a pinnule or pinna segment.

cotyledon: seed leaf.

craspedodromous venation: leaf venation characterized by a single primary vein, with the lateral veins terminating at the margin.

crassate: coarse, gross, dense, thick.

crenate: said of a margin notched with regular blunt or rounded teeth (Figure 4B).

crenulate: crenate with very small teeth (Figure 4C).

crested: having a crest, elevated appendage or ridge on the summit of an organ.

crinite: bearded with long, weak hairs.

crispate: curled.

crista (*adj. cristate*): a crest or ridge.

crustaceous: of brittle texture.

cucullate: hooded or hood-shaped.

culm: the stem of sedges and grasses.

cultrate/cultriform: shaped like a knife blade (Figure 2A, 2).

cuneate: said of the base of a leaf which tapers gradually, i.e. wedge-shaped (Figure 7E).

cuneiform: wedge-shaped; triangular, with the narrow part at the point of attachment.

cupule/cupulum (*pl. cupula*): a cup-shaped structure at the base of some fruits formed by the fusion of involucre bracts at their bases, e.g. the acorn of oaks and the fruits of some palms; cup-shaped involucre of some Asteraceae; series of free trichomes apically on achenes of Asteraceae which become coalesced with age.

cupuliform: applied to a shallow, open structure, as the involucre of an acorn.

cuspid: an abrupt, sharp, often rigid point.

cuspidate: abruptly tipped with a sharp rigid point (Figure 5G).

cyathiform: cup-shaped.

cyathium: a type of inflorescence characteristic of *Euphorbia*: the unisexual flowers condensed within a bracteate envelope from which they emerge at anthesis.

cymbiform: boat-shaped.

cyme (*adj. cymose*): an inflorescence in which the central flower opens first (centrifugal) and the first branches at least are usually forked or opposite (Figure 8A).

cymule: a small cyme or portion of one, usually few-flowered.

cypsela (*pl. cypselae*): an achene derived from a 1-loculed, inferior ovary; as in the indehiscent fruits of Asteraceae.

cystolith: mineral concretion.

D

deciduous: falling off at end of season of growth; not evergreen.

decompound: applied to leaves that are several times divided or compound.

decrecent: decreasing, gradually growing less.

decumbent: prostrate-ascending.

decurrent: as when the edges of the leaf are continued down the stem or petiole as raised lines or narrow wings (Figure 6A).

decussate: in pairs alternately at right angles (Figure 3C).

deflexed: bent abruptly downwards; outwards.

dehiscent/dehiscing: opening spontaneously when ripe as in capsules and anthers.

deltate/deltoid: shaped like an equal-sided triangle.

dendroid: tree-like; resembling the shape of a tree; branched.

dentate: the margin prominently toothed, the teeth directed outwards (Figure 4D).

denticulate: finely toothed (Figure 4E).

depressed: more or less flattened from above downwards or at least at the top.

dextrorse: turned toward the right hand.

diadelphous: in two bundles.

dichasium: a determinate type of cymose inflorescence having a central, older flower which develops first and a pair of opposite lateral branches bearing younger flowers (Figure 8C).

dichotomous: forking regularly into two.

dicotyledon: a plant having two cotyledons in the seed.

dictyostelic: with vascular bundles concentrically arranged with large overlapping leaf gaps, in the trunk.

didymous: said of anthers distinctly 2-lobed but with almost no connective.

didynamous: with four stamens in two pairs of unequal length, e.g. in the family Lamiaceae.

diffuse: loosely and openly branching or spreading.

digitate: like the fingers of a hand, with the members arising from the same point (Figure 1C).

dimidiate: of fern pinnae in which the midrib forms the basal margin for a significant distance.

dimorphic/dimorphous: of two forms.

dioecious: with unisexual flowers, the male and the female flowers on separate plants.

disarticulate: breaking apart at the joints.

disc: (1) an enlargement of the receptacle within the calyx or within the corolla or stamens, usually in the form of a ring, cup or cushion, often lobed or even cut up into so-called glands; (2) disc floret: the central floret

as compared with the ray florets in a head of the Asteraceae.

disciform: of heads of Asteraceae with central flowers perfect with tubular corollas, and the marginal flowers pistillate or neutral but without ligules, their corollas tubular or wanting.

discoid: (1) like a disc or plate; (2) applied to the heads of Asteraceae without ray flowers.

discolorous: of a leaf in which the two surfaces are unlike in colour.

distal: farther from the place of attachment, the converse of proximal.

distichous: regularly arranged one above the other in two opposite rows, one on each side of the stem or rhachis (Figure 3D).

divaricate: extremely divergent or spreading in different directions.

domatium (*pl. domatia*): small swelling/pocket in the blade of a leaf.

dorsal: relating to the back or the face turned away from the axis, of a carpel or leaf.

dorsifixed: attached by its back, said of an anther to the filament.

dorsiventral: flattened and having distinct dorsal and ventral surfaces, the two usually different, as in many leaves.

drupe (*adj. drupaceous*): a fleshy fruit such as a plum or cherry (*Flacourtia*, *Ximenia*), with hard endocarp enclosing the seed.

drupelet: a small drupe.

E

e/ex- (*prefix*): often implying absence of something, e.g. in **ebracteate** (see there), **eglandular** (having no glands) or **exindusiate** (having no indusium).

ebracteate: without bracts.

ecallose: without callus/calli.

echinate: covered with prickles like a hedgehog.

echinulate: covered with small, pointed spines.

effuse: spreading out loosely, especially of an inflorescence.

efoliate: without leaves.

eligulate: without a ligule.

ellipsoid: an elliptic solid.

elliptic: in the form of a flattened circle more than twice as long as broad (Figure 2B,3).

emarginate: notched at the extremity (Figure 5H).

embryo: the rudimentary plant still enclosed in the seed, consisting of the radicle from which the root develops, the cotyledons (one, two, rarely more), which become the earliest leaves and the plumule, the bud from which the stem and further leaves develop.

emergent: with part of the plant aerial and the rest submerged; with part extending out of the water.

endocarp: the innermost layer of the **pericarp** (see there).

endosperm: formerly called albumen, the nutritive material (mealy, oily, fleshy or horny) stored within the seed and often surrounding the embryo.

ensiform: sword-shaped.

entire: with an even margin without teeth, lobes, etc. (Figure 4I).

epaleate: without palea.

epappose: without a pappus.

epicalyx: an involucre of bracts below the flower resembling an extra calyx, as in some Malvaceae.

epigeal: describing seed germination in which the cotyledons emerge from the seed and are elevated above the soil surface.

epigynous: applied to the flower when the sepals, petals and stamens are apparently borne above the ovary, the latter being enclosed in an adnate receptacle or calyx tube (Figure 10C).

epiphyte (*adj. epiphytic*): a plant that grows on another plant but without deriving nourishment from it, i.e. not parasitic, as some ferns and orchids growing on trees.

episepal: an epicalyx segment.

equitant (of a leaf): folded around the stem so that it overlaps the leaf above and opposite.

ericoid: resembling plants of the family Ericaceae.

erose: applied to a margin which is irregularly eroded, gnawed or jagged (Figure 4G).

evanescent: disappearing quickly.

exalbuminous: without albumen/endosperm.

excrecence: an outgrowth or protuberance on the stem of a tree.

excurrent: (1) extending beyond the apex or margin of a leaf into a mucro or awn; (2) applied to tree growth in which the main axis continues to the top of the tree, from which smaller lateral branches arise.

eximbricate: not imbricate.

exindusiate: without an indusium.

exine: outer wall of spores and pollen grains, usually divided into different layers.

exocarp: the outer layer of the pericarp (of fruit).

exserted: projecting beyond, as the stamens from the tube of the corolla.

exstipulate: without stipules.

extra-axillary: beyond or outside the axil.

extra-floral: away from the flower.

extorse: of an anther which opens outwardly towards the circumference of the flower.

F

falcate: curved like a scythe.

farinose: covered with a meal-like powder.

fascicle (*adj. fascicled*): a cluster of flowers, leaves, etc. arising from about the same point (Figure 3G).

fastigate: strictly erect and more or less parallel; e.g. with reference to branches.

faveolate: honeycombed.

ferrugin(e)ous: rust-coloured.

fibril: submicroscopic thread or fibre that constitutes the form in which cellulose occurs in the cell wall.

fibrillose: covered with small fibers.

-fid (*suffix*): indicating number of parts into which an organ is cleft (divided up to $\pm$ the middle).

filament: the stalk of a stamen supporting the anther.

filamentous: thread-like.

filiform: slender, thread-like.

fimbriate: with the margin bordered by long slender processes.

fimbrillate/fimbrilliferous: with many small fringes, as the receptacle in the Asteraceae.

flabellate: fan-like.

flaccid: weak, limp, lax or flabby.

flexuose/flexuous: zig-zag or bent alternately in opposite directions.

floccose: covered with woolly hairs.

florescence: inflorescence with cluster of flowers terminating main axis, but it does not terminate with a flower and hence apex of florescence remains indeterminate forming exclusively lateral flowers.

floret: small individual flowers that make up a very dense inflorescence as those in the head of a composite flower or the spikelet of a grass spike.

floricane: a flowering and fruiting stem, especially of brambles (*Rubus* spp.).

foetid/fetid: having a disagreeable odour.

foliaceous: leaf-like.

foliar: of or relating to a leaf.

foliolate: having leaflets.

follicle (*adj.* **follicular**): a fruit formed from a single carpel opening usually only along the inner (i.e. ventral) suture to which the seeds are attached.

foveolate: marked with small pitting.

free: neither adhering nor united; free basal placenta: one in which the ovules are attached to a central column arising from the base of the ovary cavity and not reaching the top, e.g. Primulaceae; free central placenta: the same but reaching to the top of the cavity, e.g. most Caryophyllaceae.

frond: leaf of a fern, palm or cycad, or the thallus of e.g. Lemnaceae.

frondose: leafy.

frutescent (*syn.* **fruticose**): having the characters of a shrub.

fugaceous: lasting only for a short time.

fugitive: moving from place to place; evanescent, quickly fading or becoming effaced, perishable, volatile.

fulvous: tawny.

funicle/funiculus: the stalk which attaches the ovule to the placenta.

funnelform: funnel-shaped, gradually widening upwards.

furcate: forked.

fuscous: of a brownish grey colour.

fusiform: spindle-shaped, thick but tapering towards each end.

G

galea: a petal shaped like a helmet; the strongly concave upper lip (petal) of some bilabiate corollas.

galeate: helmet-shaped; having a galea.

gamopetalous: with the petals united, either entirely or at the base into a tube, cup or ring.

gamosepalous: with sepals united.

gemma (*pl.* **gemmae**): an adventitious bud arising on the frond which can produce a new plant.

gemmiferous: bearing gemmae.

geniculate: bent like a knee.

geocarpous: referring to the development of fruit in the ground from a flower which developed and was pollinated above ground.

geophyte: a perennial plant, usually herbaceous, with renewal buds located on the plant below the soil surface, as on bulbs or rhizomes.

gibbosity: a swelling at the base of an organ.

gibbous: slightly pouched.

glabrescent: becoming glabrous or nearly so.

glabrous: devoid of hairs.

gland (*adj.* **glandular/glandulose**): (1) secreting structure on the surface or embedded in the substance of a leaf, flower, etc., or raised on a stalk (glandular hairs or stipitate glands); (2) a warty protuberance or fleshy excrescence (often on petiole, inflorescence, or within the flower).

glaucous: pale bluish green or with a pale bloom.

globose: spherical or rounded.

glochidium (*pl.* **glochidia**; *adj.* **glochidiate**): barbed bristle or hooked hair.

glomerate: compactly clustered.

glomerule (*adj.* **glomerulate**): a small compact cluster.

glumaceous: resembling the glumes of grasses.

glume: bract, usually chaffy, in the spikelets of grasses and sedges.

glutinous: with a sticky exudate.

granulose: finely covered with very small granules.

gregarious: growing in groups or colonies.

gynobasic: with the style arising apparently from the base of the ovary, as in Boraginaceae and Lamiaceae.

gynoecium: the female part of the flower, consisting, when complete, of ovary, style and stigma; also called pistil.

gynophore: a stalk supporting the gynoecium and formed by an elongation of the receptacle.

gynostegium (*pl.* **gynostegia**): staminal crown in Asclepiadaceae.

H

halophyte: a plant that grows in very salty soil.

hastate: applied to the base of a leaf when it has two more or less triangular lobes diverging laterally (Figure 6B).

head: a dense inflorescence of sessile or nearly sessile flowers on a compound receptacle (Figure 8D).

helophytic: growing in marshes.

hermaphrodite (*adj.* **hermaphroditic**): an organism or structure possessing both male and female reproductive organs, e.g. a flower with both stamens and pistil.

heterocarpous: having carpels of more than one kind.

heterogamous: of different sexes, applied to a flower-head, as in some Asteraceae, having two kinds of florets, those of the ray being neuter or unisexual and those of the disc bisexual; or to spikelet pairs in Poaceae with a sterile and a female-fertile spikelet.

heteromorphic: of different forms.

heterosporous: having two types of haploid spores.

heterostylous: applied to a species which has flowers with styles differing in length or shape.

hilum: the scar left on the seed where it was attached to the funicle or placenta.

hirsute: with rather coarse, stiff hairs.

hirsutulous: minutely hirsute.

hispid: bristly pubescent.

hispidulous: minutely hispid.

hoary: covered with a white or greyish white pubescence.

homogamous: applied to a flowerhead with all the flowers of the same kind; or to spikelet pairs in Poaceae that are of the same sexuality.

homomorphic/homomorphous: with a single form; monomorphic.

homosporous: having only one type of spore.

hood: a concave segment of the corona of a milkweed (Asclepiadaceae) flower.

hyaline: almost transparent.

hydathode: a minute pore or specialized structure through which water is discharged from a leaf by guttation; sometimes differentiated as secretory trichomes.

hydrophyte: a plant living in water or in a very moist habitat; an aquatic plant.

hygrochastic: applied to plants in which the bursting of the fruit and dispersion of the spores or seeds are caused by absorption of water.

hygrophytes (*adj.* **hygrophytic**): marsh plants or plants that need a large supply of moisture for their growth.

hygroscopic: readily adsorbing and retaining moisture from the atmosphere, resulting in changes in form or position of certain cells or structures.

hypanthium (*pl.* **hypanthia**): part of the flower between the base of the calyx lobes and the insertion of the ovary, often called calyx tube.

hypocrateriform: see **salverform**.

hypogaeal: growing or remaining below ground (compare **epigeal**).

hypogynium (*pl.* **hypogynia**): portion of the receptacle below the ovary, e.g. in Cyperaceae.

hypogynous: having the flower parts attached below the base of the ovary and free from it; flowers with this arrangement have a superior ovary (Figure 10A).

hypophyll: leaf borne at the upper level of a plant, as with various floral bracts; some possibly with a protective function.

hysteranthous: with leaves appearing after the flowers.

I

imbricate: (1) overlapping like tiles (Figure 3F); (2) applied to parts in a flower bud where one sepal or petal is wholly internal and one wholly external and the others are overlapping at the edge only (Figure 9B).

immaculate: without spot or stain; pure, unblemished, undefiled.

imparipinnate: pinnate with an odd terminal leaflet (Figure 1B).

incised: margin cut rather deeply and sharply (Figure 4H).

included: not projecting, the opposite of exserted.

incrassate: thickened.

incumbent: lying on, as the cotyledons (in some Brassicaceae) with the radicle against their lateral surface.

indehiscent: not opening when ripe.

indeterminate: of an inflorescence in which the lateral or lower flowers mature first while the primary axis continues to grow, hence the terminal flower is the last to open.

indumentum: any covering of a surface such as hairs, wool, scales.

induplicate: with margins (of petals or sepals) folded inwards but not overlapping.

indurate: becoming hard.

indusiate: possessing an indusium.

indusium (*pl.* **indusia**): (1) a cup covering the stigma as in Goodeniaceae; (2) an epidermal outgrowth which covers a sorus in some ferns.

inferior: beneath or below, as in a calyx which is below the ovary, the latter then being superior; as in an ovary which appears to be below the calyx, the latter being adherent to the ovary.

inflorescence: the arrangement of the flowers.

infundibular/infundibuliform: funnel-shaped.

inserted: attached, included.

insertion: place of attachment.

internode: the portion of a stem between two nodes.

interpetiolar: applied to stipules placed between the petioles of opposite leaves (often connate).

intersepalar: between the sepals.

interstitial: situated in interstices or spaces between structures; interstitial growth: a type of growth occurring in organs that do not have specific or localized meristematic regions; all-over growth, as in some fruits.

intrapetiolar: between the petiole and the stem.

intrastaminal: between the stamens.

introrse: applied to an anther opening towards the centre of the flower.

invested: covered tightly; the focus is on the tight fit, e.g. an integument invests a seed.

involucel: a small involucre; the involucre of a secondary umbel.

involucrate: having an involucre of some kind.

involucre/involucrum: a number of bracts surrounding the base of a flowerhead or of an umbel.

involute: having the edges of the leaves rolled inwards.

isthmus (*pl.* **isthmi**): a narrow part or organ connecting two larger parts.

J

jugate: coupled or yoked together, applied especially to the leaflets of a pinnate leaf.

K

keel: see **carina**.

keeled: ridged along the middle of a flat or convex surface.

L

labellum: the lowest petal of an orchid flower, usually enlarged and different in form from the two lateral ones.

lacerate: cut irregularly; appearing torn as in certain leaves and ligules (Figure 4I).

lacinia (*pl.* **laciniae**): a slender lobe.

laciniate: cut into slender lobes (Figure 4J).

lacuna (*pl. lacunae*): (1) an internal air space or chamber, usually between cells as in leaf, stem and root tissues; also any space within a cell; (2) a leaf gap as viewed in cross sections of stem nodes.

lacunar: pertaining to or arising from lacunae.

lacunose: full of lacunae; having air-cells.

lageniform: shaped like a Florence flask.

lamella (*pl. lamellae*): a thin plate or layer.

lamina (*pl. laminae*): the limb, blade or expanded part of a leaf, sepal or petal.

lanate: woolly.

lanceolate: lance-shaped; much longer than broad; widened above the base and tapering toward the apex (Figure 2C,2).

lanuginose: cottony, similar to lanate, but with shorter trichomes (hairs).

latiseptate: with broad partitions.

leaflet: the ultimate member of a compound leaf.

legume: a simple fruit, consisting of a single carpel, usually dry and usually opening along both sutures into two halves, e.g. in the Fabaceae; any member of the Fabaceae.

lemma: the flowering glume in Poaceae.

lenticels (*adj. lenticellate*): corky spots on the bark.

lenticular: shaped like a double convex lens.

lepidote: clothed with scales.

liana/liane: a woody climber with rope-like stems.

ligulate: strap-shaped, applied to the ray florets in many Asteraceae.

ligule: (1) a thin membranous appendage at the top of the leaf sheath as in grasses (Figure 6C); (2) the limb of ray florets in Asteraceae.

limb: the upper, usually expanded part of the calyx or corolla above the tube, throat or claw.

linear: long and narrow with parallel edges (Figure 2A,1).

lineolate: marked with fine lines.

lingulate: tongue-shaped.

lip: (1) one of two divisions of a gamosepalous calyx or a gamopetalous corolla when it is cleft into an upper (posterior) and a lower (anterior) portion (see **bilabiate**); (2) of an orchid: see **labellum**.

lithophyte: a plant that grows on a rock.

lithophytic: applied to plants growing on rocks.

lobe: any division or segment of an organ (usually rounded); specifically a part of a leaf, petal or calyx cut less than halfway to the centre (Figure 4K).

lobulate/lobuled: having small lobes.

lobules: small lobes.

locellate: divided into small secondary compartments.

locular: having chambers, thus: unilocular 1-chambered; bilocular 2-chambered.

locule/loculus: a chamber or cell of an ovary or fruit containing the ovules or seeds.

loculicidal: pertaining to a ripe capsule splitting down the middle of the cells or locules (i.e. the midrib or dorsal suture and not at the line of junction) of the carpels, e.g. in most Liliaceae (compare **septicidal**).

lodicular/lodicule (*pl. lodiculae*): a small scale outside the stamens in flowers of the Poaceae.

loment: modified legume fruit with constrictions between the seeds, which at maturity separates at the constrictions into 1-seeded segments.

lophomorphic: crested.

lorate (*syn. loriform*): strap-shaped (Figure 2A,2).

lunate: shaped like the waxing moon.

lyrate: applied to a leaf which is pinnately lobed or cut into small segments below but with a much larger terminal lobe.

M

maculate: spotted or blotched.

medial/median: of or situated in the middle.

medifixed: fixed by the middle.

medulla: the pith of a stem.

membranaceous/membranous: of thin translucent texture.

mentum: an extension of the base of the column in the flower of some orchids.

mericarp: one of the separate halves or parts of a fruit (Apiaceae, Malvaceae).

-merous (*suffix*): indicating number of parts, as flowers 5-merous in which each of the floral organs present are in fives, e.g. sepals, petals or stamens.

mesophyte (*adj. mesophytic*): plants which grow in environments that are neither very wet nor very dry; plants intermediate in moisture requirements between hydrophytes and xerophytes.

micropyle: a minute opening in the ovule through which the pollen tube enters.

midrib: the principal, usually central nerve of a leaf or leaf-like part.

mitre-shaped: shaped like a bishop's cap.

monadelphous: in one bundle, e.g. the stamens in the Malvaceae.

moniliform: like a string of beads.

monocarpic: applied to a plant which flowers and fruits only once and then dies.

monochasium (*pl. monochasia*): a cyme reduced to single flowers on each axis (the laterals of the dichasium having been lost by reduction).

monocotyledon: a plant having a single cotyledon in the seed.

monoecious: with male and female flowers separate but borne on the same individual plant.

monoete: with the dehiscence line unbranched, as in bilateral spores.

mucilage (*adj. mucilaginous*): a gelatinous substance which absorbs water and increases in bulk.

mucronate: ending abruptly in a short stiff point which is a continuation of the midrib (Figure 5I).

mucronulate: finely mucronate.

multifid: divided into many lobes or segments.

muricate: rough, with short hard tubercles or pointed protuberances.

muticus: blunt, without a point.

N

-nate (*suffix*): indicating number of parts in a group, e.g. leaves 3-nate = three in a group or cluster.

naviculate: boat-shaped.

nectar guides: floral orientation cues directing a pollinator to the nectar.

nectary: any structure that secretes nectar.

nerves: the principal or more conspicuous ribs of a leaf which start from the midrib and diverge or branch throughout the blade; the smaller branches are veins.

net-veined: with the smaller veins connected like meshes of a net; reticulate.

nitid: glossy; lustrous; smooth and clear.

node: the point on the stem at which a leaf or leaves and accompanying organs arise.

nodose: having knots or being knobby, usually in reference to roots, especially in the legumes (Fabaceae).

nodulate: furnished with, characterized by nodular growths.

nut: a 1-seeded indehiscent fruit, with a hard, dry pericarp (the shell).

nutlet: a little nut.

O

obconic: inversely conical, with the point of attachment at the small end.

obcordate: more or less heart-shaped but with the narrow end below and the broad end deeply notched (Figure 5J).

oblanceolate: inversely lanceolate; with the broadest portion nearest the apex and tapering toward the base (Figure 2D,2).

oblate: transversely broadly elliptic (Figure 2B,7).

oblique: of unequal sides, e.g. applied to a leaf with the two sides of the blade unequal at the base (Figure 6D).

obloid: a solid, near elliptic shape depressed at the poles.

oblong: much longer than broad, with nearly parallel sides (Figure 2A,4).

obovate: ovate, with the broadest part above (Figure 2D,4).

obovoid: solid shape of obovate outline.

obtrullate: inversely trullate; angular-obovate, i.e. shaped like an inverted trowel, broadest above middle with two equal sides meeting at base and two shorter straight sides meeting at apex.

obtuse: blunt or rounded at the end (Figure 5K).

ocrea (*pl. ocreae; adj. ocreate*): a tubular stipule sheathing the stem (e.g. in *Polygonum*, Figure 6E).

opaque: not transparent; dull, not shining.

operculum: (1) a lid, cap or cover; in mosses, the lid on the capsule; (2) the thickened tips of integuments of certain angiosperm ovules.

opposite: (1) pertaining to leaves or branches when two are borne at the same node on opposite sides of the stem (Figure 3B); (2) one part before another, as a stamen in front of a petal.

orbicular: flat with a more or less circular outline (Figure 2B,6).

orifice: opening.

oval: broadly elliptic.

ovary: that part of the pistil (the usually enlarged base) which contains the ovules and eventually becomes the fruit.

ovate: egg-shaped, of a flat surface which is scarcely twice as long as broad, with the broader end below the middle (Figure 2C,4).

ovoid: solid shape of ovate outline.

ovule: the immature seed in the ovary before fertilization.

P

palate: in sympetalous corollas, the raised projection of the lower lip which closes or very nearly closes the throat.

palea (*pl. paleae; adj. paleate*): (1) one of the chaffy scales or thin colourless bracts amongst the flowers on the receptacle, in Asteraceae; (2) the inner of two bracts enclosing the flower, in grasses.

paleaceous: with small membranous scales; chaffy.

pallid: pale in colour.

palmate: shaped like the palm and fingers of a hand (see **digitate**).

palmatifid: with the margin palmately cleft to less than halfway to the base (Figure 4L).

palmatilobed: palmately divided to about halfway to the midrib.

palmatipartite: palmately divided almost to the midrib.

palmatisect: palmately divided down to the midrib.

pandurate/panduriform: fiddle-shaped.

panicle (*adj. paniculate*): an inflorescence in which the axis is divided into branches bearing several flowers (Figure 8E).

papilionaceous: applied to flowers with a 'butterfly-like' appearance as in many Papilionoideae.

papilla (*pl. papillae*): a soft, nipple-shaped protuberance; a type of trichome.

papillose: covered with minute, nipple-like protuberances.

pappus: the ring of hairs or scales around the top of the fruit (as in Asteraceae) and representing the calyx limb.

papule: a pimple or small pustule.

papulose: covered with papillae.

papyraceous: (1) papery; (2) white as paper.

paraphyses: sterile, hairlike, basally attached structures.

parchment-like: like skin or leather.

parietal placentation: placentation with the ovules attached to the inner surface of the wall of the ovary (Figure 11C).

paripinnate: of a pinnate leaf without an odd terminal leaflet (Figure 1A).

partite: cleft nearly but not quite to the base.

patent: spreading.

pauciserrate: sparsely serrate.

pectinate: like a comb.

pedate: resembling palmate, but the side-lobes further divided.

pedicel (*adj. pedicellate*): the stalk of an individual flower of an inflorescence.

peduncle (*adj. peduncled/peduncular*): flower stalk bearing either a solitary flower or a cluster of flowers; the common stalk (rachis or axis) of several pedicellate or sessile flowers.

pellucid: translucent.

- peltate**: applied to a leaf of which the stalk is attached to its undersurface instead of to its edge (Figure 6F).
- pendulous**: hanging down.
- penicillate**: with a tuft of hairs at the end.
- penni-parallel-veined**: pinnately parallel-veined.
- penninerved**: pinnately nerved.
- pentamerous**: having parts in fives or multiples of five.
- perianth**: the floral envelope, consisting of calyx or corolla or both.
- pericarp**: the wall of the ripened ovary; its layers may be fused into one, or more or less divisible into epicarp, mesocarp and endocarp.
- perigone**: see **perianth**.
- perigynium** (*pl.* **perigynia**): the hypogynous setae of sedges; the flask or utricle of *Carex*; any hypogynous disc.
- perigynous**: applied to the flower when the sepals, petals and stamens are inserted on an open receptacle surrounding the ovary but not adnate to it (Figure 10B).
- petal**: see **corolla**.
- petaloid**: resembling petals.
- petiolate**: having a petiole.
- petiole** (*adj.* **petiolar/petioled**): leaf stalk.
- petiolode**: the axis-like structure below the lamina and petiole (if any); it often bears the inflorescences at its distal end and sometimes shows powers of late elongation; it sometimes also produces roots (*Streptocarpus*, Gesneriaceae).
- petiolule** (*adj.* **petiolulate/petioluled**): the stalk of a leaflet.
- photonastic**: 1-sided growth in length of an organ due to the unrestricted action of light.
- phyllary**: an individual bract of the involucre found in the inflorescence of Asteraceae.
- phylloclade** (*syn.* **cladode**): a flattened foliaceous stem having the form and function of a leaf but arising in the axil of a minute, bractlike, often caducous, true leaf.
- phyllode**: a flattened petiole or leaf rhachis with the form and functions of a leaf.
- pilose**: hairy with rather long simple hairs.
- pin flower**: in heterostylous plants, the flower type having the longer style.
- pinna** (*pl.* **pinnae**): a primary division of a pinnate leaf.
- pinnate**: like a feather in appearance; applied to a compound leaf with the leaflets arranged along each side of a common rhachis.
- pinnatifid**: with the margin pinnately cleft (Figure 4M).
- pinnatilobate/pinnatilobed**: pinnately divided to about halfway to the midrib.
- pinnatipartite**: pinnately divided almost to the midrib.
- pinnatisect**: pinnately divided down to the midrib.
- pinnule**: the secondary or tertiary division of a leaf which is twice or thrice pinnate.
- pistil**: see **gynoecium**.
- pistillate**: pertaining to a flower with one or more carpels but no functional stamens; unisexual and female.
- pitted**: marked with small depressions, punctate.
- placenta**: the part of the ovary, sometimes but not always thickened or raised, to which the ovules are attached.
- plicate**: folded.
- plumose**: feathered, as bristles which have fine hairs on each side, e.g. the pappus of some Asteraceae.
- pluriseriate**: in several to many rows.
- pod**: see **legume**.
- pollen-mass**: pollen grains cohering into a single body; pollinium.
- pollinium** (*pl.* **pollinia**): a cohesive mass of pollen grains which are shed together and transported as a unit during pollination.
- polygamous**: having unisexual and bisexual flowers on the same or on different individuals.
- polypetalous**: pertaining to flowers with petals free from each other.
- pome**: simple fleshy fruit in which the outer portion is formed by expanded floral parts and receptacle.
- pore**: small, more or less round aperture, e.g. on pollen grains.
- porrect**: directed outward and forward; perpendicular to the surface.
- posterior**: in position nearest to the axis.
- posticous**: on the posterior side, next to the axis; extrorse.
- pouch**: a bag, sack or receptacle of moderate size.
- precocious**: appearing or developing early; often used of flowers which appear before the leaves.
- prehensile**: adapted for grasping, especially by wrapping around a support.
- prickle**: a sharp outgrowth from the bark or surface layer.
- primocane**: the first season's shoot or cane of a biennial woody stem, as in many brambles.
- procumbent**: trailing or lying on the ground without rooting at the nodes.
- proliferous**: bearing adventitious buds on the leaves or in the flowers, capable of rooting and forming separate plants.
- prostrate** (*syn.* **procumbent**): trailing to lying on the ground without rooting at the nodes.
- protandrous/proterandrous**: with the anthers ripening before the stigmas.
- protrusion**: exsertion.
- protuberance**: a bulge or swelling.
- proximal**: nearer to the place of attachment, the converse of distal.
- psammophyte**: a plant which grows in sand or on sandy soil.
- pseud-/pseudo-**: in combination means false, not genuine, not the true or typical.
- pseudo-aril**: false aril; see **arillode**.
- pseudo-indusium**: false indusium.
- pseudobulb**: a solid, above-ground, thickened or bulbi-form stem, characteristic of some orchids.
- pseudopetiolate**: subsessile.
- puberulent**: minutely pubescent.
- puberulous**: slightly pubescent.
- pubescent**: covered with soft, short hairs.
- pulverulent**: powdery.
- pulvinate**: cushion-shaped.
- pulvinus**: a swollen base or apex of the petiole or petiolule.
- punctate**: marked with dots or translucent glands.
- puncticulate**: very finely punctate.

pungent: ending in a sharp, rigid point.

pustulate: having slight elevations like pimples or blisters.

putamen: the shell of a nut; the hardened endocarp of a stone fruit.

pyrene: a nutlet or kernel, the stone of a drupe or similar fruit.

pyriform: pear-shaped.

R

raceme: an inflorescence in which the flowers are borne on pedicels along an unbranched axis or peduncle, the terminal flowers being the youngest and last to open (centripetal development) (Figure 8F).

racemiform: having the shape of a raceme.

rachis: see **rhachis**.

radiate: applied to flowerheads of Asteraceae with ray florets.

radical: applied to leaves which arise so close to the base of the stem as to appear to proceed from the root.

radicle: see **embryo**.

ramification: the scheme of branching or separation into branches.

raphides: mineral substances in the form of needle-shaped crystals, within the cells of plants.

ray: (1) the florets of the margin of a flowerhead of the Asteraceae when different from those of the centre or disc; (2) one of the radiating branches of an umbel.

receptacle (*adj.* **receptacular**; *syn.* **torus**): the extremity of the axis on which the parts of the flower, sepals, petals, stamens and pistils, are inserted.

reflexed: bent downwards or backwards.

reniform: kidney-shaped (Figure 6G).

repand: with the margin uneven or wavy, with shallow undulations; not as deep as sinuate.

replicate: folded abaxially along the middle, as along the midrib of a leaf.

resin (*adj.* **resinous**): plant exudate, often sticky, insoluble in water.

resupinate: having the lip lowermost because the pedicel or ovary is twisted through 180° (as flowers of Orchidaceae and Lobeliaceae).

reticulate: net-veined, with the smallest veins of a leaf connected together like the meshes of a net.

retinaculum (*pl.* **retinacula**): (1) the persistent, hook-like funiculus, as in the fruits of the Acanthaceae; (2) the structure to which the pollinium is attached, as in the Asclepiadaceae and Orchidaceae.

retorse: bent abruptly backwards.

retuse: notched (Figure 5L).

revolute: applied to leaves having the margins rolled backwards towards the midrib (Figure 4N).

rhachilla (*pl.* **rhachillae**): the rhachis (axis) of the spikelet in grasses and sedges; a secondary axis, as in a compound leaf.

rhachis (*pl.* **rhachises/rhachides**): (1) the axis of an inflorescence in which flower-stalks occur at short intervals from each other, as in grasses; (2) the axis of a pinnately compound leaf or frond, corresponding to the midrib of a simple leaf.

rhypidium (*pl.* **rhypidia**): a more or less fan-shaped cyme.

rhizome (*adj.* **rhizomatous**): a rootstock or root-like stem prostrate on or under the ground, sending rootlets downwards, and branches, leaves or flowering shoots upwards, always distinguished from a true root by the presence of buds, leaves or scales.

rhombic/rhomboid: more or less diamond-shaped; having straight margins and being widest in the middle.

riparian: of, inhabiting or situated on the bank of a river or stream.

rootstock: see **rhizome**.

rosette: a crowded, circular cluster of leaves or other organs.

rostellum: in orchids, a projection of the upper edge of the stigma in front of the anthers; a small beak.

rostrate: beaked.

rostrum: any beak-like extension.

rosulate: with the leaves in a circle or rosette.

rotate: wheel-shaped, of a corolla with a very short tube and spreading limb.

rotund: with a shape between orbicular and broadly elliptic (Figure 2B,5).

rounded: margins and apex forming a smooth arc (Figure 5M).

ruderal: a plant that grows on waste ground.

rufescent: becoming reddish.

rufous: rusty or brownish red.

rugose: wrinkled; covered with coarse reticulate lines.

rugulose: finely wrinkled.

runcinate: pinnatifid with the lobes pointing towards the base.

S

saccate: pouched.

sagittate: applied to the base of a leaf with two acute, straight lobes directed downwards (Figure 6H).

saliciform: like the genus *Salix*; willow-like.

salverform/salver-shaped: shaped like a trumpet.

samara: an indehiscent 1-seeded fruit or mericarp with wings (e.g. *Securidaca*, Malpighiaceae).

samaroid: applied to a fruit resembling a samara.

saprophytic: obtaining food from non-living organic matter.

saxicolous: living or growing among or on rocks.

scaberulous: minutely scabrous, slightly rough to the touch.

scabrelous: minutely scabrous, slightly rough to the touch.

scabrid/scabrous: rough to the touch, usually from the presence of very short harsh hairs.

scabridous/scabridulous: somewhat rough to the touch.

scales: (1) reduced leaves, usually sessile and scarious and seldom green; (2) a kind of indumentum in the form of small, flat discs attached by the centre.

scalloped: see **crenate**.

scandent: climbing.

scape: a naked flower-stalk arising from the ground.

scapigerous: possessing a scape.

scapose: bearing one or more flowers on a scape; in the form of a scape.

scarious: thin and dry, not green.

schizocarp: a dry, dehiscent fruit which splits into two or more separate carpels (mericarps) at maturity.

scimitar-shaped: see **acinaciform**.

sclereid: sclerenchyma cell having thick, lignified secondary wall.

scleroid: having a hard texture.

sclerotic: having sclereids.

scorpioid: with the main axis of an inflorescence coiled in bud, the flowers being usually 2-ranked, i.e. with single flowers alternately right and left (Figure 8A,3).

scrobiculate: pitted; marked by minute or shallow depressions.

secund: with parts or organs (branches, leaves or flowers) all directed to one side.

segment: a part or division of an organ.

sepals: see **calyx**.

septate: divided by one or more partitions.

septicidal: referring to the dehiscence of a ripe capsule which splits open through the septa or carpel margins (compare **loculicidal**).

septum (*pl. septa*; *adj. septal*): dividing cross wall or partition; an internal partition of an ovary or fruit.

sericeous: silky, with closely appressed, soft, straight hairs.

serrate: toothed like a saw, with regular pointed teeth (Figure 4O).

serrature: the toothing of a serrate leaf.

serrulate: serrate with minute teeth (Figure 4P).

sessile: without a stalk (Figure 7F).

seta (*pl. setae*): a bristle or stiff hair.

setaceous: having bristle-like hairs; bristly.

setose: beset with bristles.

setulose: a diminutive of setose.

sexine: outer layer of the exine of a pollen grain; the sculptured part of the exine.

sheath: the lower portion of the leaf clasping the stem.

silicula (*pl. siliculae*): a short silique, not much longer than broad.

siliqua/silique (*pl. siliquae*): a dry fruit divided into two compartments by a thin partition, opening by two valves which fall away from a frame on which the seeds are borne (e.g. Brassicaceae).

simple: of one piece or series, the opposite of compound, e.g. simple leaf: not divided into leaflets.

sinuate: with the margin uneven, with rather deep undulations (Figure 4Q).

sinus (*pl. sinuses*): (1) recess between the teeth or lobes on a margin; (2) angle formed by the basal lobes of a leaf or other organ.

siphonostelic: having a tubular stele; a column.

sobole: shoot, especially from the ground.

soboliferous: bearing soboles.

solitary: borne singly or alone.

sorus (*pl. sori*; *adj. soral*): a cluster of spores and/or sporangia, as in ferns.

spadix (*pl. spadices*): a flower spike with a fleshy or thickened axis, e.g. in Araceae and some palms.

spathe (*adj. spathaceous*): a large bract enclosing a spadix, or one or more bracts enclosing a flower or inflorescence.

spathella: glume; a capsule-like structure enclosing the flower buds in some Podostemaceae.

spatheole: a secondary spathe within a compound inflorescence in the Andropogoneae (Poaceae).

spathulate: spoon-shaped, broadly rounded above and long and narrow below.

spatulate: see **spathulate**.

spicate: arranged in a spike.

spiciform raceme: spike-like raceme.

spiculate: having a surface covered with fine points or crystals.

spike: an inflorescence with the flowers sessile along a simple undivided axis or rhachis (Figure 8G).

spikelet: a small spike composed of one or more flowers enclosed by glumes, in grasses and sedges.

spine shield: in some Euphorbieae, the hardened bases along the angles of the stems and branches, from which the spines of certain species are produced.

spine: a sharp-pointed hardened structure modified from another organ (leaf, branch, stipule, etc.) or from part of an organ.

spinescent: spine-tipped, having spines.

spinose: spiny or having spines.

sporangiophores: the appendages that bear the sporangia in the strobils of *Equisetum*.

sporangium (*pl. sporangia*): a hollow, unicellular or multicellular sac-like, spore-producing structure.

sporocarp: a hard, multicellular, nut-like receptacle which contains sporangia in heterosporous ferns.

sporophyll: a modified leaf or leaf-like structure which bears sporangia; e.g. fertile fronds of ferns.

spur: a slender, usually hollow extension of some part of the flower.

squama: a scale, usually derived from a leaf.

squamella: diminutive of squama, a scale of the second order or reduced in size as in the disc of Asteraceae.

squamiform: scale-like.

squarrose: spreading or recurved at some point above the base, e.g. as in the phyllaries of some Asteraceae which are sharply curved downward or outward.

stamen: in angiosperms, the pollen-producing structure in a flower usually consisting of an anther and a filament.

staminal column: see **androphore**.

staminode: an abortive or vestigial stamen without a perfect anther.

standard: the large posterior petal (outside in the bud) of a papilionaceous corolla.

stele: the portion of the plant body which comprises the vascular system (xylem and phloem) and its associated ground tissue (e.g. pericycle, interfascicular regions and pith).

stellate hairs: hairs with several arms radiating horizontally.

stigma (*adj. stigmatic*): the point or surface of the pistil which receives the pollen, either sessile (when there is no style) or on the top or surface of the style or its branches.

stipe: the stalk supporting a carpel or gynoecium; the stalk of a fern leaf.

stipel/stipella (*pl. stipellae*): small secondary stipule at the base of a leaflet.

stipitate: supported on a special stalk, or stipe, as an ovary (e.g. Capparaceae).

stipule (*adj. stipular*): leaf-like or scale-like appendage of a leaf, usually at the base of the petiole.

stipuloid: stipule-like.

stolon: a runner which roots.

stoma (*pl. stomata*): a minute pore in the epidermis of leaves.

stramineous: straw-like or straw-coloured.

striate: marked with parallel longitudinal lines, grooves or ridges.

strigillose: finely strigose.

strigose: with short stiff hairs lying close along the surface.

strigulose: minutely strigose.

strobilus (*pl. strobili*): a cone-like structure containing the reproductive organs of one or both sexes, as in *Lycopodium* and gymnosperms.

strophiole: an appendage to the hilum of some seeds.

strut: a rod or bar connecting two parts of a structure; in keeping the two parts together, it is under thrust.

style: narrow upper part of an ovary supporting the stigma.

sub- (*prefix*): implying almost, e.g. subacute: almost acute; subentire: having a very slightly uneven margin.

suberous: corky.

subtend: to have a bud or similar part growing in its axil.

subulate: awl-shaped.

succulent: a plant which accumulates water in fleshy, water-storing stems, leaves or roots; juicy, fleshy in reference to texture or appearance.

suffrutescent: like a suffrutex.

suffrutex: a perennial plant which is slightly woody only at the base.

suffruticose: shrubby.

sulcate: grooved.

sulcus (*pl. sulci*): a small longitudinal groove, furrow or channel.

superior: applied to an ovary when the sepals, petals and stamens are inserted below it (**hypogynous**; Figure 10A); also when the receptacle bearing the calyx, corolla and stamens is prolonged so as to be separate from the ovary, but forms a cup surrounding it (**perigynous**; Figure 10B).

suture: the line of junction or seam of union, commonly used of the line of opening of a carpel; the dorsal (outer or anterior) suture of a carpel represents the midrib of the carpellary leaf; the ventral (inner) suture represents the united margins on which the ovules and placentas are borne.

sward: lawn; continuous grass cover produced by stoloniferous species.

sympetalous: having petals which are partly or completely fused (*syn. gamopetalous*).

synandrium: an androecium of a male flower with united anthers.

syncarp/syncarpium: multiple or fleshy aggregate fruit.

syncarpous: composed of two or more united carpels (Figure 11B).

T

tendril: a long, slender, coiling, modified leaf or rarely stem by which a climbing plant attaches to its support.

tenuous: thin or slender in form.

tepal: a division of an undifferentiated perianth.

terete: cylindrical, circular in transverse section.

ternate: arranged in a whorl or cluster of three.

terrestrial: on or in the ground.

tessellate: having a checkered pattern, e.g. with depressions.

testa: the outer coat of a seed.

tetrad: a group of four spores or pollen grains derived from a spore mother cell or pollen grain mother cell as a result of meiosis.

tetragonous: 4-angled.

tetramerous: having four members in a whorl.

thalloid: resembling or shaped like a thallus.

thallus: a single plant body which lacks a differentiated root, stem or leaf, e.g. algae and liverworts.

theca (*pl. thecae*; *adj. thecous*): locule of an anther.

thyrs: a panicle with the secondary and ultimate axes cymose.

thyrsoid: like a thyrs.

tiller (*vb. tillering*): a shoot growing from the base of a grass (Poaceae) stem.

tomentellous/tomentulose: shortly tomentose.

tomentellum: a fine, short tomentum.

tomentose: densely covered with short, soft, felted hairs.

tomentum: a covering of woolly, densely matted hairs; wool.

toothed: see **dentate**.

tortuous: irregularly twisted or twining.

torulose: cylindrical with contractions or swellings at intervals.

torus: see **receptacle**.

trabeculate: cross-barred.

trapeziform: a figure of four unequal sides.

tri- (*prefix*): three; thrice.

trichome: an epidermal outgrowth, such as a hair or scale.

trichotomous: forking regularly into three.

trifoliate: 3-leaved.

trifoliolate: having three leaflets (Figure 1D).

trigonous: obtusely 3-angled, with plane faces.

trilete: having three scar lines forming a 'Y', or basically tetrahedral, often appearing round or triangular.

trimerous: in threes, e.g. of a flower with three sepals, three petals, etc.

triporate: with three pores.

triquetrous: triangular.

trullate: trowel-shaped; having its widest axis below the middle and with straight margins.

truncate: cut off more or less squarely at the end (Figure 5N).

tuber: (1) a thickened branch of an underground stem, which produces buds; (2) a swollen root or branch of a root acting as a reserve store of nourishment.

tubercles: small, tuberlike swellings.

tuberculate: covered with wart-like protuberances or knobs.

tuft (*adj. tufted*): clump, cluster.

tuft domatium: a domatium supplied with or consisting of hairs.

tunic (*adj.* **tunicate**): a loose membranous outer skin which does not develop from the epidermis.

turbinate/turbiniiform: shaped like a top.

turgid: swollen.

turion: (1) a young shoot or sucker which is produced from an underground stem; (2) a perennating winter bud which is separated from the parent and gives rise to a new plant in spring.

tussocky: tufted as in some grasses or grass-like plants.

U

umbel (*adj.* **umbellate**): an inflorescence in which the divergent pedicels or rays spring from the same point; compound umbel: each ray itself bearing an umbel, each of the latter called a partial umbel; simple umbel: each ray terminating in a flower (Figure 8H).

umbo: a blunt or rounded projection arising from a surface; as on a pine-cone scale.

uncial: pertaining to, connected with an inch or an ounce.

uncinate: hooked.

undulate: wavy on the margin (Figure 4R).

unifoliate: possessing only one leaf.

unifoliolate: a compound leaf which is reduced to a single, usually terminal, leaflet; the petiole is distinct from a petiole (Figure 1F).

unisexual: having functional organs appertaining to only one sex.

urceolate: urn-shaped, with a short swollen tube contracted near the top and then slightly expanded in a narrow rim.

urticate: to cause a burning or itching sensation.

utricle: bladder-shaped structure, applied (1) to the traps of *Utricularia*; (2) to the fruits of some Cyperaceae such as *Carex*.

V

vagina: sheath.

vallecular: pertaining to the grooves between the ridges, as in the fruits of Asteraceae and Apiaceae.

valvate: having the edges of petals or sepals touching without overlapping (Figure 9C).

valve (*adj.* **valvar**): one of the parts produced by the splitting of a capsule when ripe.

vegetative: pertaining to plant organs or parts which have non-reproductive functions, e.g. leaves, roots, stems, etc.

velum: veil; membranous tissue covering sporangia.

velutinous: velvety.

velvety: with a coating of fine soft hairs.

venation: arrangement of the veins of a leaf or other organ.

venose: having veins.

ventral: the inner face, or the surface towards the axis.

ventricose: swollen or bulging on one side.

vernation: folding of leaves in bud.

verrucose: warty.

verruculose: finely warty.

versatile: of an anther attached by its back to the very tip of the filament so as to swing loosely.

verticil: a whorl or arrangement of similar parts in a circle at the same level.

verticillate: of leaves in a whorl or several arising at the same node arranged regularly around the stem.

vesicle: a small sac or cavity; a spherical body.

vesicular: pertaining to, having or composed of vesicles.

vestigial: of an organ now degenerate and of little or no utility.

vestiture: any covering on a surface, e.g. plant trichomes.

vexillum (*adj.* **vexillary**): the uppermost (or posterior) petal of a papilionaceous flower.

vibratile: capable of vibration.

villous: beset with long weak hairs.

virgate: long, slender and straight as applied to stems.

viscid: sticky, glutinous.

viscidium: in orchids, a viscid part of the rostellum, which is clearly defined and removed with the pollinia as a unit, and serves to attach the pollinia to an insect or other agent.

viscidulous: slightly sticky.

viscous: glutinous or very sticky.

vitta (*pl.* **vittae**): aromatic oil tubes in the fruit of some Apiaceae.

viviparous: germinating or sprouting from seed or bud while attached to the parent plant.

voluble: twining.

W

whorl (*adj.* **whorled**): (1) a group of three or more parts at a node, e.g. leaves or branches (Figure 3E); (2) a circle of floral organs, e.g. stamens, petals, carpels.

wing: (1) any flat membranous expansion; (2) one of the two lateral petals of a papilionaceous flower; (3) one of the petaloid sepals of the flower in Polygalaceae.

X

xerochastic: applied to plants of which the fruits burst by desiccation and their seeds or spores are scattered.

xerophyte (*adj.* **xerophytic**): a plant that is adapted to dry or arid habitats.

Z

zonitriporate: with three pores equatorially.

zygomorphic: applied to flowers which are bilaterally symmetrical, i.e. capable of being bisected into identical halves in one plane only, forming mirror images.

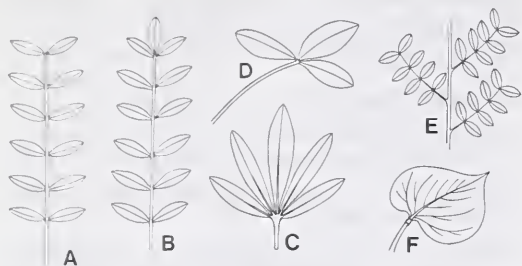


FIGURE 1.—Compound leaves: A, paripinnate; B, imparipinnate; C, digitate; D, trifoliolate; E, bipinnate; F, unifoliolate.

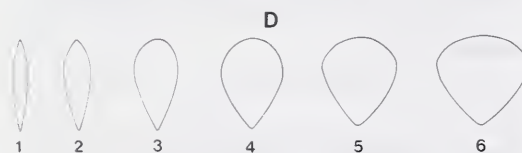
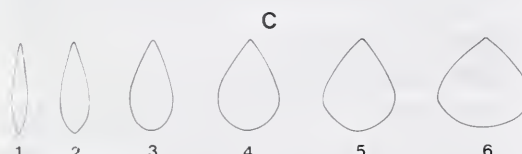
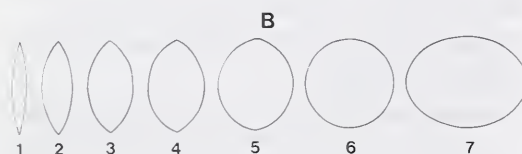
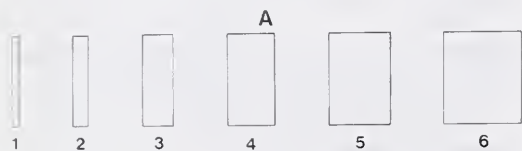


FIGURE 2.—Shapes. A. Oblong series: 1, linear; 2, cultrate or lorate; 3, narrowly oblong; 4, oblong; 5, broadly oblong; 6, very broadly oblong. B. Elliptic series: 1, very narrowly elliptic; 2, narrowly elliptic; 3, elliptic; 4, broadly elliptic; 5, rotund; 6, orbicular; 7, oblate. C. Ovate series: 1, narrowly lanceolate; 2, lanceolate; 3, narrowly ovate; 4, ovate; 5, broadly ovate; 6, very broadly ovate. D. Obovate series: 1, narrowly oblanceolate; 2, oblanceolate; 3, narrowly obovate; 4, obovate; 5, broadly obovate; 6, very broadly obovate.



FIGURE 3.—Leaf arrangement: A, alternate; B, opposite; C, decussate; D, distichous; E, whorled; F, imbricate; G, fascicled.

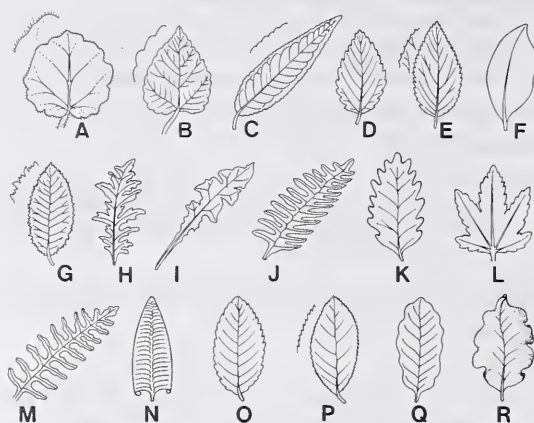


FIGURE 4.—Leaf margins: A, ciliate; B, crenate; C, crenulate; D, dentate; E, denticulate; F, entire; G, erose; H, incised; I, lacerate; J, lacinate; K, lobed; L, palmatifid; M, pinnatifid; N, revolute; O, serrate; P, serrulate; Q, sinuate; R, undulate.

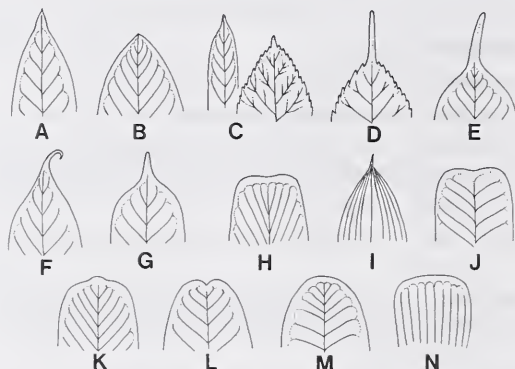


FIGURE 5.—Leaf apices: A, acuminate; B, acute; C, apiculate; D, aristate; E, caudate; F, cirrhose; G, cuspidate; H, emarginate; I, mucronate; J, obcordate; K, obtuse; L, retuse; M, rounded; N, truncate.

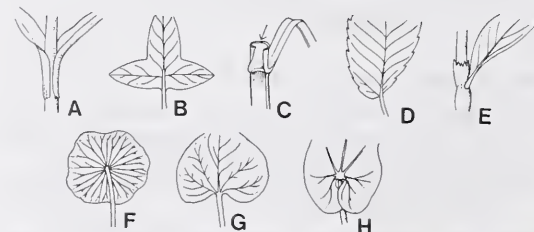


FIGURE 6.—Leaf bases: A, decurrent; B, hastate; C, ligule (see arrow); D, oblique; E, ocreate; F, peltate; G, reniform; H, sagittate.



FIGURE 7.—Leaf attachments: A, amplexicaul; B, attenuate; C, auriculate; D, cordate; E, cuneate; F, sessile.

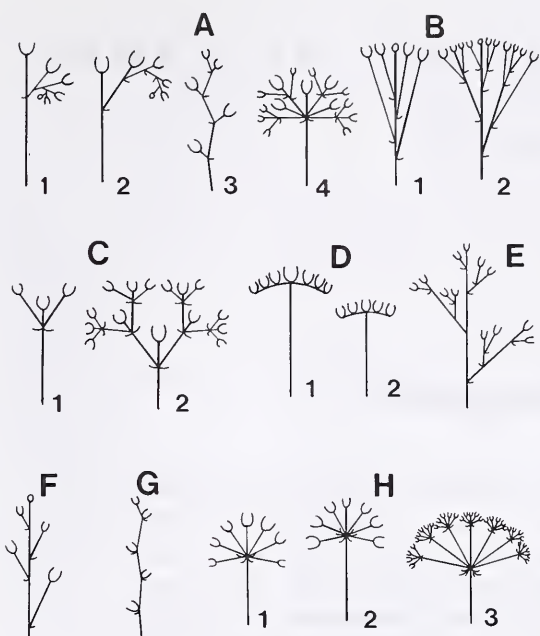


FIGURE 8.—Inflorescence types. A. Cymes: 1, cincinnus; 2, helicoid; 3, scorpioid; 4, compound. B. Corymbs: 1, simple; 2, compound. C. Dichasia: 1, simple; 2, compound. D. Heads: 1, determinate; 2, indeterminate. E. Panicle. F. Raceme. G. Spike. H. Umbels: 1, determinate; 2, indeterminate; 3, compound.

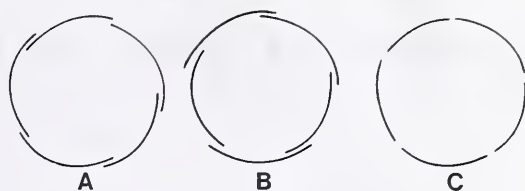


FIGURE 9.—Types of aestivation: A, contorted; B, imbricate; C, valvate.

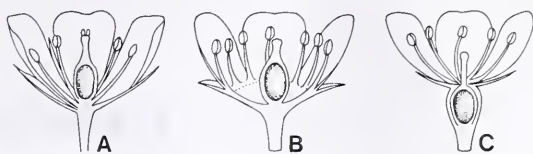


FIGURE 10.—Types of flowers: A, hypogynous; B, perigynous; C, epigynous.

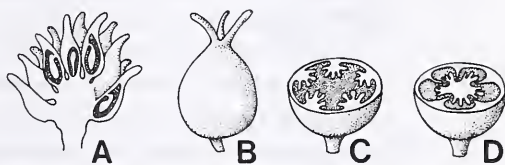


FIGURE 11.—Pistils and placentation: A, apocarpous pistil; B, syncarpous pistil; C, parietal placentation; D, axile placentation.

ACKNOWLEDGEMENTS

The authors would like to express their sincere thanks to the former directors, Dr B. de Winter (Botanical Research Institute) and Prof. J.N. Eloff (Research, National Botanical Institute), and to Prof. G.F. Smith, currently Director, Research, National Botanical Institute, for their support and continuous interest in the project; to the curators and staff of the National Herbarium in Pretoria (PRE), who helped with problems and queries; to Dr Hugh Glen, Miss Marinda Koekemoer, Mrs Carole de Wet and Mrs Nicole Meyer for assistance with computer-related problems; to all botanists outside the National Botanical Institute who provided data; to Ms Gill Condry for the line drawings; and to Mrs Henriette du Plessis for the map on the inside covers. A special word of thanks to Prof. A.E. van Wyk, Botany Department, University of Pretoria, and Dr Otto Leistner for valuable advice they have given the authors; to Mrs Emsie du Plessis and Mrs Sarie Brink for the technical editing and typesetting of the manuscript and friendly assistance with all the queries regarding the manuscript; to Mr David Davidson and Mrs Pascale Hartzler for guidance with the cover design.

Elizabeth Retief & Paul Herman
PRETORIA, 1997

INDEX TO FAMILIES AND GENERA

Synonyms are given in italics.

- A**
- Aberia*, 476
Abildgaardia, 50
Abrus, 439
Abutilon, 521
Acacia, 427
Acacia, 431, 432, 433
Acalypha, 408
Acampe, 111
Acanthaceae, 213
Acanthodium, 218, 219
Acanthosicyos, 393
Acanthospermum, 289
Acanthus, 219
Achariaceae, 230
Achillea, 289
Achyranthes, 236
Achyranthes, 236, 238, 368
Achyrocline, 289
Achyropsis, 236
Acokanthera, 253
Acorus, 43
Acrachne, 134
Acridocarpus, 519
Acridocarpus, 520
Acroceras, 134
Acrotome, 490
Actiniopteris, 8
Adansonia, 349
Adenanthellum, 290
Adenanthemum, 290
Adenia, 550
Adenium, 254
Adenocline, 409
Adenopodia, 431
Adenostemma, 290
Adhatoda, 215, 222, 225, 226
Adiantaceae, 7
Adiantum, 8
Adina, 579
Adromischus, 389
Adventina, 308
Aeollanthus, 491
Aerangis, 111
Aerva, 236
Aeschynomene, 439
Afzelia, 422
Agapanthus, 85, 86
Agathisanthemum, 578
Ageratina, 290
Ageratum, 290
Agrimonia, 573
Agrostemma, 367
Agrostis, 134
Agrostis, 183
Aizoaceae, 231
Aizoon, 231
Ajuga, 491
Albizia, 431
Albica, 86
- Alchemilla*, 572
Alchornea, 409
Alectra, 604
Alepeia, 248
Alinula, 50
Alisma, 37
Alismataceae, 37
Alistilus, 440
Allenia, 527
Alliaceae, 85
Allophylus, 600
Alloteropsis, 135
Aloe, 85, 87
Alsophila, 18
Alternanthera, 236
Alysicarpus, 440
Amaranthaceae, 235
Amaranthus, 237
Amaryllidaceae, 38
Amaryllis, 38
Amauropelia, 30
Ambrosia, 290
Ammannia, 516
Ammannia, 517, 518
Ammi, 249
Ammocharis, 38
Ampelocissus, 648
Ampelopteris, 30
Amphidoxa, 291, 303, 310, 311
Amphiglossa, 331
Amphinomia, 451, 458, 460
Amsinckia, 350
Anacampseros, 565
Anacardiaceae, 240
Anacyclus, 302
Anagallis, 566
Anaglyphis, 291
Anchusa, 350
Ancylobotrys, 253
Andrachne, 409
Androcymbium, 85, 91
Andropogon, 135
Andropogon, 152
Androstachys, 410
Ancilema, 46
Anemia, 28
Anethum, 251
Angkalanthus, 215
Angraecum, 111
Angraecum, 122
Aniseia, 384
Anisopappus, 290
Anisotes, 215
Anisotoma, 259
Annesorhiza, 249
Annona, 245
Annonaceae, 245
Anoda, 522
Anogramma, 8
Anomatheca, 74
Ansellia, 111
- Anthemis*, 291
Antheophora, 136
Anthericaceae, 85
Anthericum, 106, 107
Anthericum, 85, 91
Antherothamnus, 605
Antherotoma, 529
Anthocleista, 511
Anthospermum, 578
Anthospermum, 585
Anthoxanthum, 137
Anticharis, 605
Antidesma, 410
Antizoma, 532
Aphloia, 476
Apiaceae, 246
Apium, 249
Apium, 250
Apochaete, 194
Apocynaceae, 253
Apodolirion, 38
Apodynomene, 470
Apodytes, 488
Aponogeton, 42
Aponogetonaceae, 42
Aptenia, 534
Aptosimum, 605
Aquifoliaceae, 256
- Araceae*, 43
Arachis, 440
Arachis, 469
Arachnoides, 12
Araliaceae, 256
Araujia, 259
Arctotheca, 291
Arctotis, 291
Arctotis, 291
Arecaceae, 44
Argemone, 549
Argyrolobium, 441
Argyrolobium, 447
Aristea, 71
Aristida, 137
Aristida, 185, 191, 192
Artabotrys, 245
Artemisia, 291
Artemisiopsis, 291
Arthraxon, 140
Arthrosolen, 631
Arundinella, 141
Arundo, 141
Asclepiadaceae, 257
Asclepias, 259
Asclepias, 274, 275
Asclepias, 50
Asparagaceae, 85
Asparagopsis, 94
Asparagus, 85, 92
Asparagus, 92, 93, 94, 95
Asphodelaceae, 85
Aspidiaceae, 11
- Aspidoglossum*, 262
Aspidonepsis, 263
Aspilina, 292
Aspleniaceae, 13
Asplenium, 14
Aster, 292
Aster, 292, 298, 307
Asteracantha, 224
Asteraceae, 281
Astragalus, 441
Asystasia, 215
Atalaya, 600
Athanasia, 311, 323, 330
Athrixia, 292
Athyriaceae, 16
Athyrium, 16
Atriplex, 373
Atropa, 612
Aulaya, 608
Aulojusticia, 230
Austrorimusops, 602
Avena, 141
Axonopus, 141
Azanza, 522
Azima, 254
Azima, 596
Azolla, 17
Azollaceae, 17
- B**
- Babiana*, 72
Baccharis, 296, 301, 330
Bacopa, 606
Baeobotrys, 406
Balanitaceae, 346
Balanites, 346
Balanophoraceae, 347
Balsaminaceae, 347
Bambusa, 141
Baphia, 441
Barleria, 216
Barleria, 227
Basananthe, 551
Basella, 347
Basellaceae, 347
Basilicum, 491
Bauhinia, 422
Bauhinia, 425, 426
Becium, 491
Beckeropsis, 181
Begonia, 348
Begoniaceae, 348
Behnia, 86, 96
Belmontia, 479
Bequaertiodendron, 602
Berchemia, 571
Bergia, 403
Berkheya, 293
Berkheya, 322

- Bersama, 531
 Berula, 249
 Bewsia, 141
 Bidens, 295
Bidens, 301
Bignonia, 349
 Bignoniaceae, 348
Bilderdykia, 561
Blackwellia, 476
 Blainvillea, 296
Blastania, 395
 Blechnaceae, 17
 Blechnum, 17
 Blepharis, 218
 Blotiella, 19
 Blumea, 296
Blumea, 304, 324, 331
 Boerhavia, 540
Boerhavia, 540
 Bolbitis, 22
 Bolboschoenus, 50
 Bolusanthus, 442
 Bolusia, 442
 Bombacaceae, 349
Bonamia, 387
 Bonatea, 111
 Boophane, 38
Boottia, 68
Bopusia, 608
 Boraginaceae, 350
Borago, 354
 Borassus, 44
Borreria, 591
 Boscia, 364
Bosquia, 537
 Bothriochloa, 141
 Bothriocline, 296
 Bowia, 86, 96
 Bowkeria, 606
 Brachiaria, 142
 Brachycorythis, 112
Brachycorythis, 122
 Brachylaena, 296
Brachymeris, 330
 Brachypodium, 143
Brachyrhynchus, 137
 Brachystelma, 263
Brachystelma, 267
 Brackenridgea, 541
 Brasenia, 360
Brasillettia, 425
 Brassica, 355
Brassica, 356, 358
 Brassicaceae, 354
Brayulinea, 238
 Breonadia, 579
Breweria, 387
 Bridelia, 410
 Briza, 143
 Bromus, 144
 Brownleea, 112
 Brunsvigia, 39
 Bryophyllum, 389
Buchenroedera, 458, 459
 Buchnera, 606
Buchnera, 614
 Buddleja, 511
 Buglossoides, 350
 Bulbine, 85, 96
 Bulbophyllum, 112
 Bulbostylis, 50
Bunburya, 592
 Bupleurum, 249
 Burchellia, 579
 Burkea, 423
 Burmannia, 45
 Burmanniaceae, 45
 Burnatia, 37
 Burseraceae, 358
 Buttonia, 607
 Buxaceae, 359
 Buxus, 359
- C**
 Cabombaceae, 360
Cacalia, 326, 337
 Cactaceae, 360
Cactus, 360, 361
 Cadaba, 364
 Caesalpinia, 423
 Cajanus, 442
 Calamagrostis, 144
 Calanthe, 113
Calendula, 304
 Callilepis, 296
 Calodendrum, 593
Calonyction, 383
Calophanes, 223, 229
 Calostephane, 297
 Calpurnia, 442
Campanula, 361, 362
 Campanulaceae, 361
 Campiorthiza, 85, 97
 Campuloclinum, 297
 Canavalia, 442
 Canellaceae, 363
 Canna, 45
 Cannabaceae, 363
 Cannabis, 363
 Cannaceae, 45
Canscora, 616
 Canthium, 579
Canthium, 583, 589
Capassa, 458
 Caperonia, 410
 Capparaceae, 363
 Capparis, 364
 Capsella, 355
Caralluma, 263, 272, 273, 275
 Cardamine, 355
Cardiogyne, 537
 Cardiospermum, 600
 Carduus, 297
Carduus, 300, 339
 Carex, 51
 Carissa, 254
Caroxylon, 375
 Carpha, 52
 Caryophyllaceae, 366
 Cassia, 423
Cassia, 423, 424, 425, 426
 Cassine, 369
Cassine, 488
Cassinia, 320, 342
 Cassinopsis, 488
 Cassipourca, 572
 Cassytha, 506
Castalis, 304
- Catalepis, 145
 Catha, 370
 Catharanthus, 254
Cathastrum, 372
 Catophractes, 348
 Catunaregam, 580
 Cayratia, 648
Cedrela, 531
 Celastraceae, 369
Celastrus, 371, 372
 Celosia, 237
Celosia, 238, 239
Celsia, 604
 Celtis, 637
 Cenchrus, 145
Cenia, 302
 Centaurea, 297
 Centella, 249
 Centema, 237
Centema, 239
 Centrostigma, 113
Cephalandra, 394
 Cephalanthus, 580
 Cephalaria, 400
 Cephalocroton, 410
 Cerastium, 367
 Ceratiosicyos, 230
Ceratogonum, 562
 Ceratophyllaceae, 372
 Ceratophyllum, 373
 Ceratotheca, 552
 Cereus, 360
Cereus, 360
 Ceropegia, 266
Ceropegia, 276
 Cestrum, 620
 Ceterach, 16
Chaenostoma, 610, 615
 Chaetacanthus, 220
 Chaetacme, 637
 Chamaecrista, 423
 Chamaesyce, 410
 Chascanum, 640
 Chasmatophyllum, 534
Cheilanthes, 9, 10
 Cheilanthes, 8
Cheiranthus, 356
 Chenopodiaceae, 373
 Chenopodium, 373
Chilianthus, 512
 Chionanthus, 543
 Chironia, 478
 Chloris, 145
Chloris, 185
Chlorocodon, 555
Chlorocyathus, 555
 Chlorophytum, 85, 97
 Chlorophytum, 92
 Choristylis, 406
 Choritaenia, 250
 Chortolirion, 85, 97
Chrestella, 30
 Chromolaena, 298
 Chrysanthellum, 298
 Chrysanthemoides, 298
Chrysanthemum, 290, 302, 325, 329
 Chrysanthemum, 298
 Chrysobalanaceae, 375
 Chrysocoma, 298
- Chrysocoma*, 327
Chrysophyllum, 602
 Chrysopogon, 146
 Cichorium, 298
 Ciclospermum, 250
 Cienfuegosia, 522
 Cineraria, 298
Cineraria, 334
 Cirsium, 300
 Cissampelos, 532
Cissampelos, 532
 Cissus, 648
Cissus, 648, 649, 650
Citrullus, 393
 Citrullus, 394
 Cladium, 52
 Clausena, 593
 Cleistachne, 146
 Cleistanthus, 411
 Clematis, 569
Clematis, 570
 Clematopsis, 570
Cleome, 364
 Cleome, 365
 Clerodendrum, 641
Cliffortia, 537
 Cliffortia, 574
Clinopodium, 496
 Clitoria, 443
 Clivia, 39
 Clusiaceae, 376
 Clutia, 411
 Cnestis, 379
 Cnicus, 300
 Coccinia, 394
 Coccus, 532
 Coddia, 580
 Coelachyrum, 146
 Coffea, 580
 Coix, 146
 Cola, 625
 Colchicaceae, 85
 Coleochloa, 52
 Coleotype, 46
Coleus, 498, 500, 502, 503
Colocynthis, 393, 394
 Colophospermum, 424
Colutea, 457
 Combretaceae, 377
 Combretum, 377
 Commelina, 46
 Commelinaceae, 45
 Commicarpus, 540
 Commiphora, 358
 Conium, 250
 Connaraceae, 379
Conopharyngia, 256
 Conostomium, 580
 Convolvulaceae, 379
 Convolvulus, 380
Convolvulus, 382, 383, 384, 385, 386, 387, 388
Conyza, 292, 304, 331, 344
 Conyza, 300
Copaiba, 424
Copaifera, 424
 Corallocarpus, 394
 Corbichonia, 231
 Corchorus, 632
 Cordia, 351

Cordyla, 424
 Cordylogyne, 269
Coreopsis, 295, 301
Coreopsis, 301
Coriandrum, 250
 Cornaceae, 388
Coronopus, 355
Corrigiola, 488
Cortaderia, 146
Corycium, 113
Corycium, 123
Cosmos, 301
Costularia, 65
Cotoneaster, 574
Cotoneaster, 575
Cotula, 301
Cotyledon, 389
Courbonia, 366
Courtoisina, 52
Crabbea, 220
Cracca, 469, 470, 471
Craspedorhachis, 172
Crassocephalum, 302
Crassocephalum, 339
Crassula, 390
 Crassulaceae, 389
Craterocapsa, 361
Craterostigma, 607
Crepis, 302
Crinipes, 192
Crinum, 39
Crocodylodes, 294, 295
Crocoshmia, 72
Crocodylon, 370
Crossandra, 221
Crossopteryx, 581
Crotalaria, 443
Crotalaria, 449
Croton, 412
Cryptocarya, 506
Cryptolepis, 554
Cryptolepis, 555
Ctenitis, 12
Ctenium, 146
Ctenolepis, 394
Ctenomeria, 412
Cucumella, 395
Cucumis, 395
Cucumis, 395
Cucurbita, 397
Cucurbitaceae, 393
Cullen, 445
Cupressaceae, 32
Curtisia, 389
Curtinus, 73
Cuscuta, 381
Cussonia, 256
Cussonia, 257
Cyanotis, 48
Cyanus, 297
Cyatheia, 18
Cyatheaceae, 18
Cyathula, 238
Cyathula, 239
Cyclonema, 641, 642
Cyclosorus, 30
Cycnium, 607
Cymbopappus, 302
Cymbopappus, 302
Cymbopogon, 147

Cymbosetaria, 187
Cynanchum, 269
Cynodon, 147
Cynoglossum, 351
Cynorkis, 113
 Cyperaceae, 49
Cyperus, 53
Cyperus, 61, 62
Cyphia, 508
Cypholepis, 146
Cyphostemma, 648
Cyrtanthus, 40
Cyrtomium, 12
Cyrtorchis, 113
Cysticapnos, 477
Cystopteris, 16
Cytisus, 442, 462

D

Dactylis, 148
Dactyloctenium, 148
Dais, 630
Dalbergia, 446
Dalbergia, 464
Dalechampia, 412
Danthonia, 175
Danthoniopsis, 148
Datura, 620
Daucus, 250
Davallia, 19
Davalliaceae, 18
Decabelone, 279
Decorsea, 446
Deinbollia, 600
Dekindtia, 543
Delosperma, 534
Denekia, 302
Dennstaedtiaceae, 19
Desmochaeta, 238
Desmodium, 446
Desmonema, 533
Detris, 307
Deverra, 250
Diacarpa, 600
Diandrochloa, 149
Dianthus, 367
Diaphananthe, 113
Diascia, 613, 615
Dicerocaryum, 552
Dichaelia, 264, 265
Dichanthium, 149
Dichapetalaceae, 399
Dichapetalum, 399
Dichilus, 447
Dichilus, 461
Dichondra, 382
Dichrocephala, 303
Dichrostachys, 432
Dicliptera, 221
Dicliptera, 228
Diclis, 607
Dicoma, 303
Dicranopteris, 21
Dictamnus, 593
Didymochlaena, 12
Didymodoxa, 638
Diectomis, 136
Dierama, 73

Dietes, 74
Digitaria, 149
Diheteropogon, 152
Dimorphotheca, 304
Dimorphotheca, 328
Dinebra, 152
Dinocanthium, 590
Diodia, 591
Dioscorea, 66
Dioscoreaceae, 66
Diospyros, 401
Dipcadi, 86, 97
Diphaca, 463
Diplachne, 141, 176
Diplachne, 152
Diplazium, 16
Diplophium, 250
Diplopappus, 292, 307
Diplorhynchus, 255
Diplotaxis, 355
Diplotaxis, 356
Dipsacaceae, 399
Disa, 113
Disperis, 115
Disperma, 222
Dissotis, 529
Dobrowskyia, 511
Dodonaea, 601
Doellia, 304
Dolichochoete, 194
Dolichos, 442, 446, 457, 460, 465, 466, 467, 473
Dolichos, 447
Dombeia, 625
Dopatrium, 608
Doratanthera, 605
Doria, 337
Doryopteris, 10
Dovyalis, 476
Dracaena, 85, 98
Dracaenaceae, 85
Dregea, 269
Drimia, 105
Drimia, 86, 98
Drimiopsis, 86, 98
Droguetia, 638
Drosera, 400
Droseraceae, 400
Drymaria, 368
Dryopteris, 12
Dryopteris, 30
Drypetes, 413
Duchesnea, 574
Dufouria, 558
Dumasia, 448
Duosperma, 222
Duranta, 642
Duthiastrum, 74
Duthiella, 74
Duvalia, 270
Duvalia, 271
Duvernoia, 222
Dyschoriste, 223

E

Ebenaceae, 401
Ebracteola, 534
Ecbolium, 223

Ecbolium, 226
Echinochloa, 153
Echium, 351
Eclipta, 305
Ectadiopsis, 554
Ehretia, 351
Ehrharta, 153
Eichhornia, 196
Einadia, 374
Ekebergia, 530
Elaeodendron, 370
Elaphoglossum, 22
Elatinaceae, 403
Elatine, 404
Eleocharis, 57
Elephantorrhiza, 432
Eleusine, 154
Elionurus, 154
Elsiea, 104
Elytraria, 223
Elytrophorus, 154
Emex, 561
Emilia, 305
Empodium, 68
Encephalartos, 33
Endostemon, 492
Englerophytum, 602
Enicostema, 478
Enneapogon, 154
Ensete, 108
Entada, 431
Entandrophragma, 530
Enteropogon, 155
Enterospermum, 591, 592
Entolasia, 155
Epaltes, 325
Epilobium, 546
Equisetaceae, 20
Equisetum, 20
Eragrostis, 149
Eragrostis, 155
Erianthemum, 514
Erica, 404
Ericaceae, 404
Erigeron, 296, 300, 301
Erigeron, 305
Eriocaulaceae, 66
Eriocaulon, 67
Eriocaulus, 305
Eriochloa, 165
Eriochrysis, 166
Eriosema, 448
Eriosema, 463, 467
Eriosemaceae, 86
Eriosemum, 86, 99
Eriosema, 52
Erlangea, 296
Erlangea, 305
Eruca, 356
Erucastrium, 356
Erysimum, 358
Erythrina, 449
Erythrococca, 413
Erythrophysa, 601
Erythroxylaceae, 406
Erythroxylum, 406
Escalloniaceae, 406
Ethulia, 306
Euclea, 402
Eucomis, 86, 100

Eugenia, 538
 Eulalia, 166
 Eulophia, 116
 Eumorphia, 306
Eupatorium, 290, 297, 298, 341
Euphorbia, 410, 411
 Euphorbia, 413
 Euphorbiaceae, 407
 Euryops, 306
 Eustachys, 166
Euxolus, 237
 Evolvulus, 382
Evolvulus, 387
 Exacum, 478
Exacum, 478
Exochaenium, 479, 480

F

Fabaceae, 421
 Fadogia, 581
Fadogia, 590
Fagara, 594, 595
Fagelia, 467
 Fagopyrum, 561
 Faiderbia, 433
 Falckia, 382
 Fallopia, 561
 Faurea, 567
Felicia, 292, 307
 Felicia, 306
 Ferrara, 74
 Festuca, 166
 Ficinia, 57
 Ficus, 535
Fimbristylis, 50
 Fimbristylis, 57
 Fingerhuthia, 167
 Flacourtia, 476
 Flacourtiaceae, 475
 Flagellaria, 67
 Flagellariaceae, 67
 Flaveria, 307
 Flemingia, 449
Flemingia, 465
Fleurya, 638
 Floscopa, 48
 Flueggea, 417
 Fockea, 270
 Foeniculum, 251
Forbesia, 68
 Fragaria, 574
 Freesia, 74
 Freylinia, 608
Friedrichsthalia, 353
 Frithia, 534
Fugosia, 522, 523
 Fuirena, 58
 Fumaria, 477
 Fumariaceae, 477

G

Gaillardia, 307
 Galactia, 450
Galega, 470
 Galenia, 231
 Galinsoga, 308

Galium, 581
Galium, 591
 Galopina, 582
 Galpinia, 517
 Galtonia, 86, 100
 Gamochaeta, 308
Gamochaeta, 308
Gamolepis, 306
 Garcinia, 376
 Gardenia, 582
Gardenia, 583, 590, 591
 Garuleum, 308
 Gasteria, 85, 100
 Gaura, 546
 Gazania, 308
Gazania, 322
 Geigeria, 309
Geissorhiza, 78
Gelonium, 420
 Geniosporum, 493
 Genlisea, 507
 Gentianaceae, 478
 Geraniaceae, 480
 Geranium, 480
Geranium, 482
Gerardia, 607
 Gerardiina, 608
 Gerbera, 310
 Gerrardina, 476
 Gesneriaceae, 483
 Gethyllis, 41
 Geum, 574
 Girardinia, 638
 Gisekia, 232
 Gladiolus, 74
 Gleichenia, 21
 Gleicheniaceae, 20
 Glinus, 232
 Gloriosa, 85, 100
 Glossochilus, 223
Glycine, 460, 462, 465, 467, 472
Gnaphalium, 308, 313, 314, 315, 317, 318, 319, 320, 321, 324, 331
 Gnaphalium, 310
 Gnidia, 630
Gnidia, 630, 631
Gomphocarpus, 273, 274
 Gomphostigma, 512
Gomphrena, 236
 Gomphrena, 238
 Gonatopus, 43
Gongrothamnus, 343
Gorskia, 424
 Gossypium, 523
 Graderia, 608
Gratiola, 609
 Grewia, 633
 Greyia, 485
 Greyiaceae, 485
Grumilea, 589
Guatteria, 245
 Guibourtia, 424
 Guilleminea, 238
 Guizotia, 311
 Gunnera, 486
 Gunneraceae, 486
 Gymnema, 270
 Gymnopenzia, 311
Gymnosporia, 370, 371, 372

Gynandriris, 77
Gynandropsis, 365
Gynura, 302
 Gyrocarpus, 487

H

Habenaria, 111, 112
 Habenaria, 119
 Hackelochloa, 167
 Haemanthus, 41
Haemanthus, 42
 Halleria, 608
 Haloragaceae, 486
 Hamamelidaceae, 486
 Haplocarpha, 311
 Harpagophytum, 553
 Harpephyllum, 240
 Harpochloa, 167
 Harveya, 608
 Haworthia, 85, 100
Haworthia, 97
 Hebenstretia, 617
Hedyotis, 583, 584, 585, 589
Hedysarum, 440, 446, 447
 Heinsia, 582
 Helianthus, 311
Helichrysum, 289, 331
 Helichrysum, 311
 Helictotrichon, 167
 Helinus, 571
 Heliophila, 356
Heliophytum, 352
 Heliotropium, 352
 Helixanthera, 514
Helophytum, 391
 Hemarthria, 168
Hemicarpha, 60
Hemietelia, 18
 Hemizygia, 493
 Hermannia, 625
 Hermbstaedtia, 238
 Hernandiaceae, 487
 Herniaria, 488
Herschelia, 121
 Herschelianthe, 121
 Hertia, 322
Hertia, 333, 336
 Hesperantha, 77
Hesseea, 42
 Heteranthera, 196
 Heterocentron, 530
 Heteromorpha, 251
 Heteropogon, 168
 Heteropyxis, 539
Heudelotia, 358
 Hewittia, 382
 Hexalobus, 245
 Hibiscus, 523
Hibiscus, 527
Hieracium, 302, 342
 Hippobromus, 601
 Hippocratea, 370
 Hirpicium, 322
 Histiopteris, 19
Hitzeria, 358
 Hoffmannseggia, 424
 Holarthrena, 255
 Holcus, 168

Holmskioldia, 642
 Holothrix, 121
 Holubia, 553
 Homalium, 476
 Homeria, 78
 Hordeum, 168
 Hoslundia, 495
Hottonia, 611
 Huernia, 270
 Huerniopsis, 272
 Hugonia, 508
 Hyacinthaceae, 86
 Hybanthus, 646
 Hydnora, 487
 Hydnoraceae, 487
Hydrilla, 68
 Hydrocharitaceae, 68
Hydrocotyle, 249
 Hydrocotyle, 251
Hygrophila, 222
 Hygrophila, 223
 Hymenocardia, 417
 Hymenodictyon, 582
 Hymenophyllaceae, 21
 Hymenophyllum, 21
Hymenosicyos, 395
 Hyparrhenia, 168
Hyparrhenia, 171
 Hyperacanthus, 583
 Hypericophyllum, 322
 Hypericum, 376
 Hypertelis, 232
 Hyperthelia, 171
 Hyphaene, 44
 Hypochaeris, 322
 Hypodematium, 12
 Hypoestes, 224
 Hypolepis, 20
Hypolepis, 8
 Hypoxidaceae, 68
 Hypoxis, 69
Hypoxis, 70
Hysperpa, 532
 Hyptis, 495

I

Ibicella, 529
Iboza, 505
 Icacinaeae, 487
 Ifloga, 323
 Illex, 256
 Illecebraceae, 488
 Ilysanthes, 609
Ilysanthes, 611
 Impatiens, 347
 Imperata, 171
 Indigastrium, 450
 Indigofera, 450
Indigofera, 450
 Inezia, 323
 Inula, 323
Inula, 328
 Inulanthera, 323
locaste, 330
 Iphigenia, 85, 101
 Ipomoea, 382
Ipomoea, 387, 388
 Iridaceae, 70

Ischaemum, 171
 Ischyrolepis, 197
 Isoetaceae, 22
 Isoetes, 22
 Isoglossa, 224
 Isoplepis, 59
Ixia, 78

J

Jacaranda, 348
Jacquemontia, 384
Jacquemontia, 386
Jamesbrittenia, 609
Jasminum, 544
Jatropha, 417
Jaumea, 322
Jumellea, 121
 Juncaceae, 82
Juncellus, 53, 54
Juncus, 82
Jussiaea, 547
Justicia, 215, 222, 224
Justicia, 225

K

Kaempferia, 200
Kalaharia, 642
Kalanchoe, 392
Kanahia, 272
Karomia, 642
Kedrostis, 395
Kedrostis, 396
Keetia, 583
Khadia, 535
Kigelia, 349
Kiggelaria, 476
Kirkia, 619
Kleinia, 323
Kleinia, 337
Kniphofia, 85, 101
Knowltonia, 570
Kobresia, 64
Koeleria, 171
Kohautia, 583
Kotschya, 457
Kraussia, 584
Kraussia, 592
Krebsia, 279
Kyllinga, 59
Kyphocarpa, 239

L

Lablab, 457
Lachnopylis, 512, 513
Lactuca, 324
Lactuca, 325
Lagarosiphon, 68
Lagenaria, 397
Laggersa, 324
Laggersa, 326, 331
Lagurus, 171
Lagynias, 584
 Lamiaceae, 489
Lamium, 495
Landolphia, 254

Landolphia, 255
Lannea, 240
Lantana, 642
Lapeirousia, 74, 80
Lapeirousia, 78
Laportea, 638
Lappula, 353
Lasiocorys, 491, 496
Lasiopogon, 324
Lastiosiphon, 630, 631
Lasiospermum, 324
Lasiospermum, 324
Launaea, 325
 Lauraceae, 506
Lauremburgia, 486
Lebeckia, 457
Ledebouria, 86, 102
Leersia, 172
Lefebvreia, 252
Leidesia, 418
Lemna, 83
 Lemnaceae, 83
 Lentibulariaceae, 506
Leonotis, 495
Leontonyx, 320
Lepidagathis, 226
Lepidium, 355
Lepidium, 356
Leptactina, 584
Leptocarydion, 172
Leptochloa, 172
Leptostachya, 225
Leptothamnus, 327
Lessertia, 457
Leucanthemum, 325
Leucas, 496
Leucosidea, 574
Leucospermum, 567
Leucosphaera, 239
Lidbeckia, 323, 324
Lightfootia, 361, 362
Ligustrum, 544
Liliaceae, 83, 86
Lilium, 86, 103
Limeum, 232
Limnophila, 610
Limnophyton, 37
Limosella, 611
 Linaceae, 508
Linaria, 611
Lindernia, 611
Linociera, 543, 544
Lintonia, 172
Linum, 508
Linzia, 344
Liparis, 122
Lipocarpa, 50
Lipocarpa, 60
Lippia, 643
Lippia, 643
Lissochilus, 116, 118
Listrostachys, 113
Litanthus, 86, 103
Lithops, 535
Lithospermum, 350
Lithospermum, 352
Litogyne, 325
Littonia, 85, 103
Lobelia, 509
Lobelia, 511

Lobeliaceae, 508
Locellaria, 425
Lochnera, 254
 Loganiaceae, 511
Lolium, 172
 Lomariopsidaceae, 22
Lonchocarpus, 442
Lonchocarpus, 457
Lonicera, 579
 Lophacme, 173
Lophiocarpus, 375
Lopholaena, 325
Loranthaceae, 514
Loranthus, 514, 515, 516
Lotononis, 458
Lotononis, 463, 464, 467
Lotus, 460
Loudetia, 173
Loxogramme, 26
Loxoscape, 15
Ludwigia, 547
Luffa, 397, 398
Lunathyrium, 16
Luzula, 82
 Luzuriagaceae, 86
Lychnis, 367
Lycium, 579
Lycium, 621
 Lycopodiaceae, 23
Lycopodium, 23
Lycopodium, 27
Lydenburgia, 370
Lyperia, 609, 610
Lysimachia, 567
 Lythraceae, 516
Lythrum, 517
Lythrum, 518

M

Mackaya, 226
Maclura, 537
Macowania, 325
Macropetalum, 272
Macrorungia, 215, 227
Macrosiphon, 614
Macrotyloma, 460
Maerua, 366
Maesa, 406
Maesa, 538
Mahernia, 626, 627, 628
 Malpighiaceae, 519
Malva, 526
 Malvaceae, 520
Malvastrum, 526
Manilkara, 602
Manulea, 611
Manuleopsis, 605
Marattia, 24
 Marattiaceae, 24
Marcellia, 239
Margaritaria, 418
Margelliantha, 113
Mariscus, 50
Mariscus, 60
Markhamia, 349
Marsdenia, 269
Marsilea, 24
 Marsileaceae, 24
 Martyniaceae, 529
Massonia, 86, 103
Matricaria, 302
Matthiola, 357
Maytenus, 371
Medeola, 92
Medicago, 460
Megacolinum, 113
Megalochlamys, 226
Megaloprotachne, 173
Melanospermum, 612
Melanthera, 326
Melasma, 604, 605
Melasma, 612
 Melastomataceae, 529
Melhania, 628
Melia, 530
 Meliaceae, 530
 Melianthaceae, 531
Melianthus, 531
Melica, 174
Melilotus, 461
Melinis, 174
Melolobium, 461
Melothria, 395, 398, 399
 Menispermaceae, 532
Menispermum, 532
Menodora, 545
Mentha, 496
 Menyanthaceae, 533
Mercurialis, 409
Merremia, 387
Merxmüllera, 175
 Mesembryanthemaceae, 533
Mestoklema, 535
Metalasia, 326
Metarungia, 227
Methyscophyllum, 370
Microcharis, 455
Microchloa, 175
Micrococca, 418
Microgramma, 26
Microlepis, 20
Micromeria, 502
Microsorium, 26
Microstegium, 175
Microtea, 375
Mikania, 326
Mikaniopsis, 326
Mimosa, 425, 431, 433
Mimosa, 433
Mimulus, 612
Mimusops, 602
Mimusops, 602
Mirabilis, 540
Miraglossum, 272
Mirasolia, 342
Miscanthidium, 176
Miscanthus, 176
Modecca, 550
Modiola, 526
Mohria, 28
Mollugo, 232
Mollugo, 233
Momordica, 397
Monactinocephalus, 323
Monadenia, 115
Monadenia, 122
Monadenium, 418
Monanthotaxis, 245

Mondia, 555
 Monechma, 227
 Monochoria, 196
 Monocymbium, 176
 Monodora, 246
 Monopsis, 511
 Monsonia, 481
 Montanoa, 326
 Moraceae, 535
Moraea, 74, 77
 Moraea, 79
Moschosma, 491
 Mosdenia, 176
 Mossia, 535
 Mucuna, 462
 Mukia, 398
 Mundulea, 462
 Muraltia, 559
 Murdannia, 48
Musa, 108
 Musaceae, 108
Myagrurn, 357
 Myosotis, 353
 Myrica, 537
 Myricaceae, 537
 Myriophyllum, 486
 Myrothamnaceae, 537
 Myrothamnus, 537
 Myrsinaceae, 537
 Myrsine, 538
Myrsine, 538
Myrsiphyllum, 92, 95
 Myrtaceae, 538
Mystacidium, 113
 Mystacidium, 122
*Mystroxylo*n, 369, 370

N

Najadaceae, 108
 Najas, 109
 Nananthus, 535
Nasturtium, 357
Natalia, 531
Nautochilus, 497
 Nemesia, 612
 Neobakeria, 86, 103
 Neobolusia, 122
 Neonotonia, 462
 Neorautanenia, 462
Neorosea, 591
Nepeta, 495
 Nephrolepis, 19
 Neptunia, 433
 Nerine, 41
 Nervilia, 122
 Nesaea, 517
 Neuracanthus, 227
 Nicandra, 621
 Nicolaia, 326
Nicolsonia, 446, 447
 Nicotiana, 621
 Nidorella, 326
Nidorella, 331
Niebuhrria, 366
 Nolletia, 327
Nortenia, 616
Notholaena, 9
 Nothoscordum, 85, 103

Notobuxus, 359
Notoniopsis, 323, 324
Notosceptrum, 102
 Nuxia, 512
 Nyctaginaceae, 540
 Nymphaea, 541
 Nymphaeaceae, 541
 Nymphoides, 533

O

Oberonia, 123
 Obetia, 638
 Ochna, 541
 Ochnaceae, 541
Ocinum, 491, 492, 493, 495, 500
 Ocimum, 497
 Ocotea, 506
Odina, 240
 Odontelytrum, 176
 Odyssea, 176
 Oenothera, 547
 Olaceaceae, 542
 Olax, 543
Oldenlandia, 580, 583, 584
Oldenlandia, 584
Olea, 544
 Olea, 545
 Oleaceae, 543
 Oleandra, 19
 Oligomeris, 571
 Olinia, 546
 Oliniaceae, 545
 Onagraceae, 546
 Oncoba, 476
Oncoba, 477
 Oncosiphon, 327
Operculina, 387
 Ophioglossaceae, 35
 Ophioglossum, 25
 Ophrestia, 462
 Oplismenus, 176
 Opuntia, 360
 Orbea, 272
 Orbeanthus, 273
 Orbeopsis, 273
 Orchidaceae, 109
 Oreosyce, 398
 Oricia, 593
 Ormocarpum, 462
 Ornithogalum, 86, 103
 Ornithoglossum, 85, 104
 Orobanchaceae, 548
 Orobancha, 548
 Oropetium, 176
 Orthanthera, 273
Orthosiphon, 492, 493, 494, 495
 Orthosiphon, 497
Orygia, 231, 566
 Oryza, 177
 Osmunda, 26
 Osmundaceae, 25
Osteospermum, 298, 304, 342
 Osteospermum, 327
Ostryoderris, 475
 Osyridicarpus, 596
 Osyris, 596
 Otholobium, 463
Othonna, 325

Othonna, 328
 Otiophora, 585
 Otoptera, 463
 Ottelia, 68
 Oxalidaceae, 548
 Oxalis, 548
 Oxyanthus, 586
 Oxygonum, 562
Oxyspermum, 582
 Oxytenanthera, 177
 Ozoroa, 240

P

Pachycarpus, 273
 Pachycymbium, 275
 Pachypodium, 255
 Pachystigma, 586
Pachystigma, 590
 Paederia, 586
Paepalanthus, 67
 Pancratium, 42
Panicum, 165, 166
 Panicum, 177
 Papaver, 549
 Papaveraceae, 549
 Pappea, 601
 Parapodium, 275
 Parinari, 375
 Parkinsonia, 425
 Paronychia, 489
 Paropsia, 551
 Parthenium, 328
 Paspalidium, 180
 Paspalum, 180
 Passerina, 631
 Passiflora, 551
 Passifloraceae, 550
 Pastinaca, 251
Pauletia, 423
 Pavetta, 587
 Pavonia, 527
 Pearsonia, 463
 Pechuel-Loeschea, 328
 Pedaliaceae, 551
 Peddiea, 632
 Pedistylis, 514
 Pegolettia, 328
 Pelargonium, 482
Peliostomum, 606
 Peliostomum, 613
Pellaea, 9, 10
 Pellaea, 10
 Peltophorum, 425
 Pennisetum, 180
 Pentanisia, 588
 Pentarrhinum, 275
 Pentas, 588
 Pentaschistis, 181
 Pentatrichia, 329
 Pentodon, 588
Pentzia, 327, 330
 Pentzia, 329
 Peperomia, 556
Peponia, 398
 Peponium, 398
 Pereskia, 361
 Perularia, 275
 Periglossum, 276

Periploca, 555
 Periplocaceae, 554
 Peristrophe, 227
Peristylus, 120
Perlebia, 423
 Perotis, 182
 Persicaria, 562
 Petalidium, 228
 Peucedanum, 251
Peucedanum, 253
Phacocarpus, 477
Phaenohoffmannia, 463
 Phaeoptilum, 540
 Phalaris, 182
Phanerophlebia, 12
Pharnaceum, 232, 234
 Pharnaceum, 234
Phaseolus, 446
 Phaulopsis, 228
Philippia, 405
 Philyrophyllum, 329
Philyrophyllum, 329
Phlomis, 495, 496
 Phoenix, 45
 Phragmites, 182
 Phygeliu, 613
 Phyla, 643
 Phylla, 571
Phyllanthus, 410, 418
 Phyllanthus, 418
Phyllogelton, 571
Phyllopodium, 612
 Phymaspermum, 329
Phymatodes, 26
 Physalis, 621
Physalis, 624
Physotrichia, 250
 Phytolacca, 556
 Phytolaccaceae, 556
 Picris, 330
 Pilea, 638
 Piliostigma, 425
Piloselloides, 310
Pimpinella, 250
Pimpinella, 252
 Pinaceae, 32
 Pinus, 32
 Piper, 557
 Piperaceae, 556
 Piriqeta, 636
Pisosperma, 396
 Pistia, 43
 Pittosporaceae, 557
 Pittosporum, 557
Pituranthos, 250
 Pityrogramma, 10
 Plantaginaceae, 557
 Plantago, 557
 Platycarpha, 330
Plectranthus, 491, 497, 501, 505
 Plectranthus, 498
Plectronia, 579, 580, 589
 Plectroniella, 589
Plectropis, 474
Pleiospora, 463
 Pleopeltis, 27
 Pleurostyliu, 372
Plexipus, 640
 Plicosepalus, 514
 Plinius, 234

Pluchea, 328
Pluchea, 330
Plukenetia, 420
Plumbaginaceae, 558
Plumbago, 558
Pneumatopteris, 30
Poa, 183
Poaceae, 125
Podocarpaceae, 33
Podocarpus, 33
Podostemaceae, 558
Pogonarthria, 183
Polanisia, 365
Polemannia, 252
Pollichia, 489
Polycarena, 612
Polycarpaea, 368
Polycarpon, 368
Polygala, 559
Polygalaceae, 559
Polygonaceae, 561
Polygonum, 561, 562, 563
Polygonum, 563
Polypodiaceae, 26
Polypodium, 16, 30
Polypodium, 27
Polypogon, 183
Polystachya, 123
Polystichum, 12
Polystichum, 13
Pontederia, 196
Pontederiaceae, 195
Popowia, 245
Populus, 595
Porana, 388
Portulaca, 565
Portulacaceae, 564
Portulacaria, 566
Potamogeton, 196
Potamogetonaceae, 196
Potamophila, 184
Potentilla, 575
Pouteria, 602
Pouzolzia, 639
Premna, 643
Pretrea, 552
Primulaceae, 566
Printzia, 330
Priva, 643
Proboscidea, 529
Prosopis, 433
Prophytochloa, 184
Protasparagus, 92, 93, 94, 95
Protea, 568
Proteaceae, 567
Protium, 358
Protorhus, 241
Prunus, 575
Psammotropha, 234
Pseudarthria, 464
Pseudechinolaena, 184
Pseudobrachiaria, 142
Pseudobromus, 166
Pseudocadia, 474
Pseudocassine, 370
Pseudoconyza, 331
Pseudognaphalium, 331
Pseudolachnostylis, 419
Psidium, 331

Psidium, 331
Psidium, 539
Psilotaceae, 27
Psilotrichum, 239
Psilotum, 27
Psoralea, 445, 463
Psoralea, 464
Psychotria, 589
Psydrax, 589
Ptaeroxylaceae, 569
Ptaeroxylon, 569
Pteleopsis, 378
Pteridium, 20
Pteris, 11
Pterocarpus, 464
Pterocelastrus, 372
Pterococcus, 420
Pterodiscus, 553
Pterolobium, 425
Pterolobium, 425
Pteronia, 331
Pterothrix, 331
Pterygodium, 123
Ptycholobium, 464
Pueraria, 462
Pueraria, 465
Pulicaria, 329
Pulicaria, 332
Pupalia, 238, 239
Pupalia, 239
Putterlickia, 372
Pycnostachys, 501
Pycneus, 62
Pygeum, 575
Pygmaeoathamnus, 590
Pyracantha, 575
Pyrenacantha, 488
Pyrostria, 590
Pyrrosia, 27

Q

Quisqualis, 379

R

Rabdosia, 501
Rabdosiella, 501
Radinosisphon, 80
Radyera, 527
Randia, 580, 590
Ranunculaceae, 569
Ranunculus, 570
Rapanea, 538
Raphanocarpus, 397
Raphanus, 357
Raphidophyllum, 614
Raphidospora, 225
Raphionacme, 555
Rapistrum, 357
Rapuntium, 509
Rauvolfia, 255
Rawsonia, 477
Reichardia, 423
Reissantia, 371
Rendlia, 184
Requienia, 465
Reseda, 571

Resedaceae, 570
Resedella, 571
Restio, 197
Restionaceae, 197
Rhabdostigma, 584
Rhagodia, 374
Rhamnaceae, 571
Rhamnus, 571, 572
Rhamnus, 572
Rhamphicarpa, 607
Rhamphicarpa, 613
Rhigozum, 349
Rhinacanthus, 228
Rhizophoraceae, 572
Rhodohypoxis, 70
Rhoicissus, 650
Rhus, 241
Rhus, 241
Rhynchelytrum, 174
Rhynchosia, 462
Rhynchosia, 465
Rhynchospora, 63
Rhynea, 342
Rhytiglossa, 224
Richardia, 44
Richardia, 590
Richardsonia, 590
Ricinus, 420
Rikliella, 60
Rinorea, 646
Riocreuxia, 276
Rivina, 556
Robinia, 442
Robinia, 467
Romulea, 80
Rondeletia, 581
Rorippa, 357
Rosa, 575
Rotala, 519
Rothia, 467
Rothmannia, 590
Rottboellia, 184
Royena, 401, 402
Rubia, 591
Rubiaceae, 576
Rubus, 575
Ruellia, 223
Ruellia, 228
Ruelliopsis, 229
Rumex, 563
Rumohra, 13
Ruschia, 535
Ruscus, 96
Ruspolia, 229
Rutaceae, 593
Ruttya, 229
Ruttyruspolia, 229

S

Sacciolepis, 184
Salacia, 372
Salicaceae, 595
Salix, 595
Salsola, 375
Salvadora, 596
Salvadoraceae, 595
Salvia, 501

Salvinia, 28
Salviniaaceae, 28
Samolus, 567
Sandersonia, 85, 104
Sanguisorba, 576
Sanicula, 252
Sansevieria, 85, 105
Santalaceae, 596
Sapindaceae, 599
Sapindus, 600
Sapium, 420
Saponaria, 369
Sapotaceae, 601
Sarcophyte, 347
Sarcostemma, 276
Sartidia, 185
Satureja, 502
Satyrium, 123
Scabiosa, 400
Scadoxus, 42
Scandix, 252
Schefflera, 257
Schistostephium, 332
Schizachyrium, 185
Schizaea, 29
Schizaeaceae, 28
Schizobasis, 86, 105
Schizocarphus, 105
Schizochilus, 124
Schizoglossum, 262, 263, 272, 279
Schizoglossum, 276
Schizostylis, 80
Schkuhria, 332
Schmidelia, 600
Schmidia, 185
Schoenefeldia, 185
Schoenoplectus, 50
Schoenoplectus, 63
Schoenoxiphium, 64
Schoenus, 64
Schotia, 425
Schrebera, 545
Scilla, 102, 103, 105
Scilla, 86, 105
Scirpus, 50, 57, 58, 59, 60, 63, 64
Scirpus, 64
Scleria, 64
Sclerocarya, 244
Sclerochiton, 229
Scolopia, 477
Scopularia, 121
Scrophulariaceae, 603
Scutellaria, 502
Scutia, 572
Scytalis, 474
Sebaea, 478
Secamone, 277
Securidaca, 561
Securinea, 411, 417
Seddera, 387
Seemannaralia, 257
Sehima, 186
Selaginaceae, 617
Selaginella, 29
Selaginellaceae, 29
Selago, 616, 619
Selago, 618
Semonvillea, 233
Senebiera, 355

Senecio, 302, 305, 323, 324, 325, 326
Senecio, 332
Senna, 425
Sericanthe, 591
Sericocoma, 239
Sericorema, 239
Serratula, 300
Sesamothamnus, 553
Sesamum, 553
Sesbania, 468
Seseli, 250, 252
Sesuvium, 234
Setaria, 186
Shantzia, 522
Sida, 521
Sida, 527
Sideroxylon, 602
Sigesbeckia, 339
Silene, 368
Silybum, 339
Simaroubaceae, 619
Sinapis, 355
Sinapis, 357
Siphonochilus, 200
Siphonoglossa, 229
Sisymbrium, 355, 356
Sisymbrium, 357
Sisyranthus, 278
Sium, 249
Sium, 252
Smilacaceae, 86
Smilax, 86, 105
Smithia, 457
Smithia, 468
Smodingium, 244
Solanaceae, 620
Solanecio, 339
Solanum, 622
Solenostemon, 502
Sonchus, 325
Sonchus, 339
Sophora, 442
Sophora, 468
Sopubia, 614
Sorghastrum, 187
Sorghum, 188
Sparrmannia, 634
Spathodea, 349
Spergula, 368
Spergularia, 368
Spermaceae, 591
Sphaeralcea, 528
Sphaeranthus, 340
Sphaeroclinium, 302
Sphaerocodon, 278
Sphaerostylis, 421
Sphaerostylis, 558
Sphedamnocarpus, 519
Sphenoclea, 624
Sphenocleaceae, 624
Sphenostylis, 468
Spilanthus, 340
Spirodela, 83
Spirostachys, 420
Sporledera, 552
Sporobolus, 188
Stachys, 503
Stachytarpheta, 644
Stadmannia, 601

Stapelia, 270, 272, 273, 275, 279
Stapelia, 278
Steganotaenia, 253
Stegnogramma, 30
Stellaria, 369
Sternodiopsis, 614
Stenochlaena, 18
Stenoglottis, 125
Stenostelma, 279
Stephania, 532
Sterculia, 629
Sterculiaceae, 625
Stereochlaena, 191
Stiburus, 191
Stipa, 191
Stipagrostis, 191
Stobaea, 293, 294, 295
Stoebe, 340
Stomatanthes, 341
Stomatostemma, 555
Strelitzia, 197
Strelitziaceae, 197
Streptocarpus, 483
Streptopetalum, 636
Striga, 614
Strophanthus, 255
Strychnos, 513
Stultitia, 272, 273
Stylochiton, 43
Stylosanthes, 469
Styppeiochloa, 192
Suaeda, 375
Suregada, 420
Sutera, 609, 610, 612
Sutera, 615
Sutherlandia, 469
Swertia, 480
Sylitra, 464
Synadenium, 420
Syncolostemon, 493
Syncolostemon, 504
Syngonanthus, 67
Syringodea, 74
Syringodea, 80
Syzygium, 539

T

Tabernaemontana, 256
Tacazzea, 555
Tagetes, 341
Tagetes, 342
Talbotia, 198
Talinum, 566
Tanacetum, 302, 332
Tapinanthus, 515
Tapinanthus, 516
Tapiphyllum, 591
Taraxacum, 341
Tarchonanthus, 341
Tarennia, 591
Tarigidia, 192
Tavarecia, 279
Taxus, 33
Teclea, 593
Tecomaria, 349
Tecophilaeaceae, 197
Tectaria, 13
Teedia, 615

Telosma, 279
Tenaris, 279
Tenrynea, 341
Tephrosia, 462, 464, 465
Tephrosia, 469
Teramnus, 472
Terminalia, 379
Testudinaria, 66
Tetradenia, 504
Tetrapogon, 145
Tetrapogon, 192
Tetraria, 65
Tetraselago, 616
Tetratelia, 365
Teucrium, 505
Thalictrum, 570
Thamnosma, 594
Thelypteridaceae, 29
Thelypteris, 30
Thelypteris, 30
Themeda, 192
Thesium, 596
Thespesia, 522, 523
Thilachium, 366
Thlaspi, 355, 356
Thorncroftia, 505
Thunbergia, 230
Thuranthos, 86, 105
Thymelaeaceae, 630
Tieghemia, 516
Tiliaceae, 632
Tiliacora, 532
Tinnea, 505
Tinospora, 533
Tithonia, 342
Toddalia, 594
Toddalia, 594
Toddaliopsis, 594
Todea, 26
Tolpis, 342
Toona, 530
Torenia, 616
Trachyandra, 85, 105
Trachypogon, 193
Tradescantia, 48
Tradescantia, 48
Tragia, 420
Tragia, 421
Tragiella, 421
Tragopogon, 342
Tragus, 193
Trema, 637
Trianthema, 234
Trianthema, 235
Triaspis, 520
Triaspis, 520
Tribulus, 650
Tricalysia, 591
Tricalysia, 592
Trichilia, 530
Trichilia, 531
Trichocladus, 487
Trichodesma, 353
Trichogyne, 323
Tricholaena, 193
Trichomanes, 14
Trichomanes, 21
Trichoneura, 193
Trichopteryx, 193
Trichosanthes, 396

Tricliceras, 636
Tridactyle, 125
Tridax, 342
Tridentea, 279
Trifolium, 461
Trifolium, 472
Trigonella, 473
Trilepisium, 537
Trimeniaceae, 635
Trimeria, 477
Tripogon, 193
Tripteris, 327, 328, 342
Tripteris, 342
Triraphis, 194
Tristachya, 194
Tristicha, 558
Tritonia, 73, 81
Tritonia, 81
Triumfetta, 634
Tryphostemma, 551
Tulbaghia, 85, 107
Turbina, 387
Turia, 397
Turneraceae, 636
Turraea, 531
Tylophora, 280
Tylosema, 426
Typha, 198
Typhaceae, 198

U

Ulex, 473
Ulmaceae, 637
Ulmus, 637
Uncaria, 553
Uragoga, 589
Urelytrum, 194
Urera, 638
Urginea, 105
Urginea, 86, 107
Urochloa, 194
Ursinia, 342
Urtica, 639
Urticaceae, 637
Utricularia, 507
Uvaria, 246

V

Vaccaria, 369
Vaccinium, 406
Vahlia, 639
Vahliaceae, 639
Valeriana, 639
Valerianaceae, 639
Vangueria, 584, 586, 589, 590, 591
Vangueria, 592
Vanwykia, 516
Vellozia, 198, 199
Velloziaceae, 198
Venidium, 291
Vepris, 594
Verbena, 644
Verbenaceae, 640
Verbesina, 311

Verbesina, 343
Vernonia, 305, 328
Vernonia, 343
Veronica, 616
Vicia, 473
Vigna, 447, 463, 468, 469
Vigna, 473
Viola, 646
Violaceae, 645
Viscaceae, 646
Viscum, 646
Vitaceae, 647
Vitellariopsis, 602
Vitex, 643
Vitex, 644
Vitis, 648
Vittaria, 31
Vittariaceae, 31
Vulpia, 195

W

Wahlenbergia, 361
Wahlenbergia, 361
Walafrida, 619
Walleria, 197
Waltheria, 629
Warburgia, 363
Watsonia, 81
Webbia, 301
Wedelia, 292, 296, 326
Widdringtonia, 32
Wissadula, 528
Withania, 624
Wolffia, 83
Woodia, 280
Woodsia, 13
Wormskioldia, 636
Wrightia, 256

X

Xanthium, 346
Xanthocercis, 474
Xeranthemum, 317
Xerocarpus, 467
Xeroderris, 475
Xeromphis, 580
Xerophyta, 198
Ximenesia, 343
Ximenia, 543
Xylia, 433
Xylopia, 246
Xylosma, 636
Xylothea, 477
Xymalos, 636
Xyridaceae, 199
Xyris, 199
Xysmalobium, 273, 274
Xysmalobium, 280

Z

Zaleya, 235
Zaluzianskya, 616
Zamiaceae, 33
Zannichellia, 200
Zannichelliaceae, 199
Zantedeschia, 43
Zanthoxylum, 379
Zanthoxylum, 594
Zehneria, 395, 398, 399
Zehneria, 399
Zingiberaceae, 200
Zinnia, 346
Ziziphus, 572
Zornia, 475
Zoutpansbergia, 296
Zygoon, 592
Zygophyllaceae, 650
Zygophyllum, 651

STRELITZIA

1. Botanical diversity in southern Africa. 1994. B.J. Huntley (ed.). ISBN 1-874907-25-0.
2. Cyperaceae in Natal. 1995. K.D. Gordon-Gray. ISBN 1-874907-04-8.
3. Cederberg vegetation and flora. 1996. H.C. Taylor. ISBN 1-874907-28-5.
4. Red Data List of southern African plants. 1996. Craig Hilton-Taylor. ISBN 1-874907-29-3.
5. Taxonomic literature of southern African plants. 1997. N.L. Meyer, M. Mössmer & G.F. Smith (eds). ISBN 1-874907-35-8.
6. Plants of the northern provinces of South Africa: keys and diagnostic characters. 1997. E. Retief & P.P.J. Herman. ISBN 1-874907-30-7

MEMOIRS OF THE BOTANICAL SURVEY OF SOUTH AFRICA

(discontinued after No. 63)

Still available are:

2. Botanical survey of Natal and Zululand. 1921. R.D. Aitken & G.W. Gale.
8. Researches on the vegetation of Natal. Series II. 1925. J.W. Bews & R.D. Aitken.
12. Botanical survey of the Springbok Flats (Transvaal). 1926. E.E. Galpin.
17. The vegetation of the Divisions of Albany and Bathurst. 1937. R.A. Dyer.
29. The wheel-point method of survey and measurement of semi-open grasslands and karoo vegetation in South Africa. 1955. C.E.M. Tidmarsh & C.M. Havenga.
31. Studies of the vegetation of parts of the Bloemfontein and Brandfort Districts. 1958. J.W.C. Mostert.
33. The vegetation of the Districts of East London and King William's Town, Cape Province. 1962. D.M. Comins.
39. Flora of Natal. 1973. J.H. Ross. ISBN 0-621-00327-1.
41. The biostratigraphy of the Permian and Triassic. Part 3. A review of Gondwana Permian palynology with particular reference to the northern Karoo Basin, South Africa. 1977. J.M. Anderson. ISBN 0-621-03834-2.
42. Vegetation of Westfalia Estate on the north-eastern Transvaal escarpment. 1977. J.C. Scheepers. ISBN 0-621-03844-X.
43. The bryophytes of southern Africa. An annotated checklist. 1979. R.E. Magill & E.A. Schelpe. ISBN 0-621-04718-X.
44. A conspectus of the African *Acacia* species. 1979. J.H. Ross. ISBN 0-621-05309-0.
45. The plant ecology of the Isipingo Beach area, Natal, South Africa. 1980. C.J. Ward. ISBN 0-621-05307-4.
46. A phytosociological study of the Upper Orange River Valley. 1980. M.J.A. Werger. ISBN 0-621-05308-2.
47. A catalogue of South African green, brown and red algae. 1984. S.C. Seagrief. ISBN 0-621-07971-5.
49. Pattern analysis in savanna-woodlands at Nylsvley, South Africa. 1984. R.H. Whittaker, J.W. Morris & D. Goodman. ISBN 0-621-08265-1.
50. A classification of the mountain vegetation of the Fynbos Biome. 1985. B.M. Campbell. ISBN 0-621-08862-5.
52. A plant ecological bibliography and thesaurus for southern Africa up to 1975. 1986. A.P. Backer, D.J.B. Killick & D. Edwards. ISBN 0-621-08871-4.
53. A catalogue of problem plants in southern Africa, incorporating the National Weed List of South Africa. 1986. M.J. Wells, A.A. Balsinhas, H. Joffe, V.M. Engelbrecht, G. Harding & C.H. Stirtton. ISBN 0-621-09688-1.
55. Barrier plants of southern Africa. 1987. L. Henderson. ISBN 0-621-10338-1.
57. Veld types of South Africa. 3rd edn. 1988. J.P.H. Acocks. With separate wall map. ISBN 0-621-11394-8.
58. Grasses of southern Africa. 1990. G.E. Gibbs Russell, L. Watson, M. Koekemoer, L. Smook, N.P. Barker, H.M. Anderson & M.J. Dallwitz. ISBN 0-620-14846-2.
59. Tannin-like substances in grass leaves. 1990. R.P. Ellis. ISBN 0-620-15151-X.
60. Atlas of the leaf anatomy in *Pentstemon* (Arundineae: Poaceae). 1991. R.P. Ellis. ISBN 0-9583205-1-9.
61. The marine red algae of Natal, South Africa: Order Gelidiales (Rhodophyta). 1992. Richard E. Norris. ISBN 1-874907-01-3.
62. Plants of southern Africa: names and distribution. 1993. T.H. Arnold & B.C. de Wet (eds). ISBN 1-874907-03-X.
63. Biomes of southern Africa: an objective categorization. 2nd edn. 1994. M.C. Rutherford & R.H. Westfall. ISBN 1-874907-24-2.

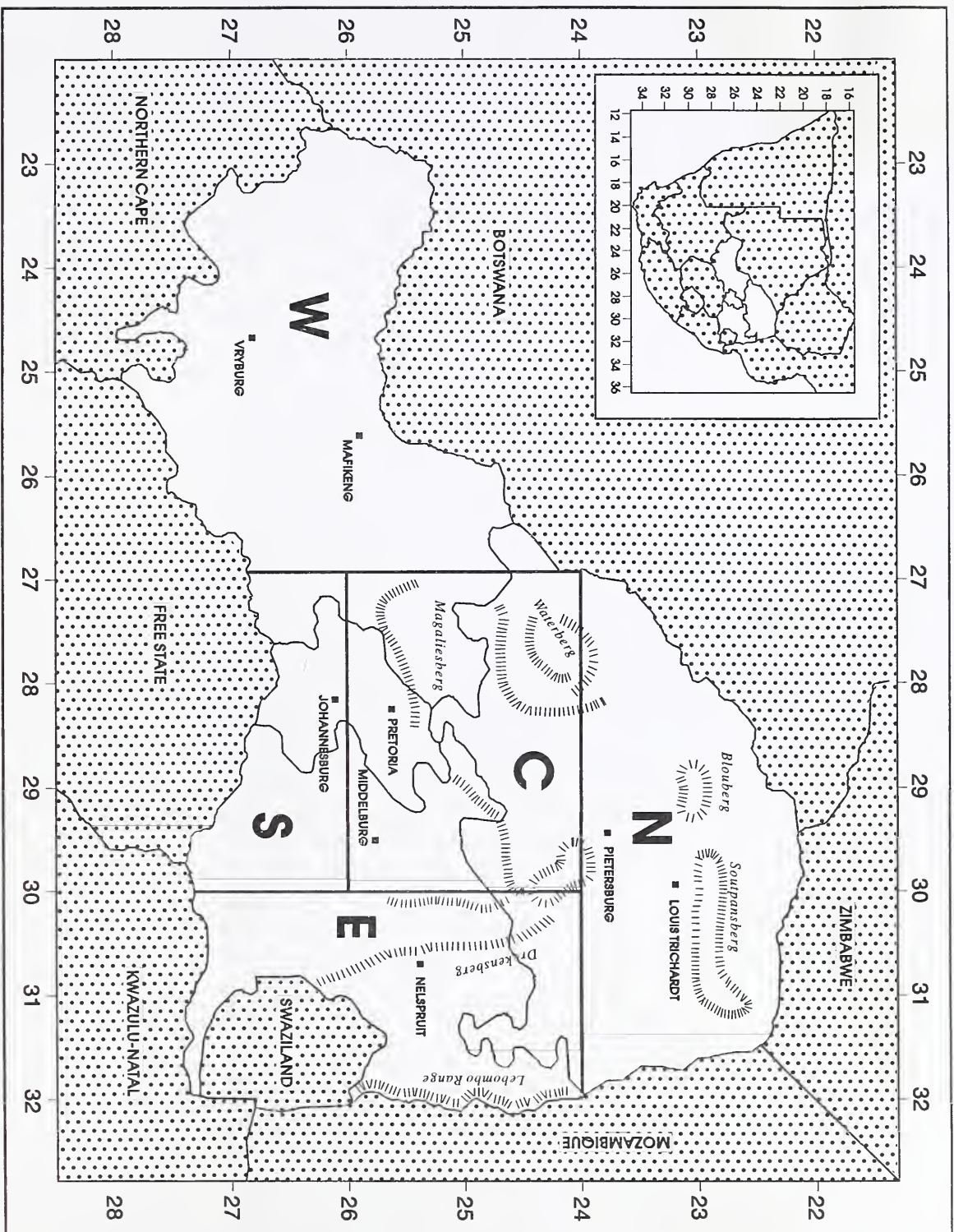
ANNALS OF KIRSTENBOSCH BOTANIC GARDENS

(discontinued after Vol. 19)

The following volumes are available:

14. The moraeas of southern Africa. 1986. P. Goldblatt. ISSN 0-258-3305. ISBN 0-620-09974-7.
15. The botany of the southern Natal Drakensberg. 1987. O.M. Hilliard & B.L. Burtt. ISSN 0-258-3305. ISBN 0-620-10625-5.
16. Pelargoniums of southern Africa. Volume 3. 1988. J.J.A. van der Walt & P.J. Vorster. ISSN 0-258-3305. ISBN 0-620-1107-4.
17. The *Lachenalia* handbook. 1988. G. Duncan. ISSN 0-258-3305. ISBN 0-620-11953-5.
18. The way to Kirstenbosch. 1988. D.P. McCracken & E.M. McCracken. ISSN 0-258-3305. ISBN 0-620-11648-X.
19. The genus *Watsonia*. 1989. P. Goldblatt. ISSN 0-258-3305. ISBN 0-620-12517-9.

Enquiries: Bookshop, National Botanical Institute, Private Bag X101, Pretoria, 0001 South Africa.
Tel. (012) 804-3200 Fax (012) 804-3211



The four northern provinces of the Republic of South Africa are the Northern Province, North-West, Gauteng and Mpumalanga. Descriptions of the ferns and fern allies, gymnosperms, monocotyledons and dicotyledons occurring in the area comprise the bulk of this work and include the following: life form, height, distinguishing characters, flower colour and flowering time (where applicable), habitat, a voucher specimen and distribution in the four provinces according to five subregions: north (N), west (W), central (C), south (S) and east (E). Keys to the major groups, families and genera are provided. Families, genera and species are arranged alphabetically. An illustrated glossary and a listing of families according to the Cronquist System are also provided. The work is aimed at professional botanists, nature conservationists, students, amateur botanists and informed laymen.



NATIONAL
*B*OTANICAL
INSTITUTE